

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY**

GARY MARCHESE, ESTHER WEINSTEIN,
and JOAN HOWARD Individually, and on
Behalf of All Others Similarly Situated,

Plaintiffs,

VS.

CABLEVISION SYSTEMS CORPORATION
and CSC HOLDINGS, LLC,

Defendants.

Civil Action No. 10-2190 (KM) (MAH)

**PLAINTIFFS' MEMORANDUM OF LAW IN SUPPORT OF MOTION FOR CLASS
CERTIFICATION**

TABLE OF CONTENTS

TABLE OF AUTHORITIES	iii
INTRODUCTION	1
PROCEDURAL BACKGROUND.....	4
CLASS DEFINITION	6
FACTUAL BACKGROUND.....	6
LEGAL STANDARDS	9
ARGUMENT	11
I. THE CLASS MEETS THE REQUIREMENTS OF RULE 23(a).....	11
A. Numerosity Is Satisfied.....	11
B. There Are Questions Of Law And Fact Common To All Proposed Class Members ...	11
C. Plaintiffs’ Claims Are Typical Of The Claims Of The Proposed Class.....	13
D. Plaintiffs Will Fairly And Adequately Represent The Class’s Interests.....	14
II. THIS CASE MEETS THE REQUIREMENTS OF RULE 23(b)(3) BECAUSE QUESTIONS COMMON TO THE CLASS PREDOMINATE AND A CLASS ACTION IS SUPERIOR TO OTHER AVAILABLE METHODS	15
A. Common Questions Predominate Because Each Of The Tying-Claim Elements Are Susceptible To Proof Through Common Evidence	15
1. Separate Tying And Tied Products	17
2. Condition Or Coercion.....	18
3. Market Power.....	20
a. The Tying Product Market Is Two Way Services.....	20
b. The Geographic Market Is Cablevision’s Tri-State Footprint	21
c. Cablevision Has Substantial Market Power In The Market For Two Way Services In Its Tri-State Footprint	22
4. Classwide Proof Shows That A “Substantial Volume Of Commerce” Is Affected In The STB Market	25

5. Plaintiffs' Expert Has Offered a Classwide Method to Prove Antitrust Injury	26
B. A Class Action Is Superior To Other Available Methods For The Fair And Efficient Adjudication Of This Controversy.....	29
III. PLAINTIFFS' UNJUST-ENRICHMENT CLAIMS SHOULD BE CERTIFIED FOR CLASS TREATMENT	31
IV. PLAINTIFFS' COUNSEL SHOULD BE APPOINTED CLASS COUNSEL	32
CONCLUSION.....	32

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Allen v. Holiday Universal</i> , 249 F.R.D. 166 (E.D. Pa. 2008).....	6
<i>Allen-Myland, Inc. v. Int'l Bus. Machines Corp.</i> , 33 F.3d 194 (3d Cir. 1994).....	16, 25
<i>Amgen Inc. v. Conn. Ret. Plans</i> , 133 S.Ct. 1184 (2013).....	10
<i>Anchem Prods, Inc. v. Windsor</i> , 521 U.S. 591 (1997).....	10, 15, 16
<i>Atlantic Richfield Co. v. USA Petroleum Co.</i> , 495 U.S. 328 (1990).....	16
<i>Baby Neal For & By Kanter v. Casey</i> , 43 F.3d 48 (3d Cir. 1994).....	12
<i>Barnes v. Am. Tobacco Co.</i> , 161 F.3d 127 (3d Cir. 1998).....	13
<i>Behrend v. Comcast Corp.</i> , 655 F.3d 182 (3d Cir. 2011).....	21
<i>In re Blood Reagents Antitrust Litig.</i> , 283 F.R.D. 222 (E.D. Pa. 2012).....	14, 15
<i>Bogosian v. Gulf Oil Corp.</i> , 561 F.2d 434 (3d Cir. 1977).....	<i>passim</i>
<i>In re Brand Name Prescription Drugs Antitrust Litig.</i> , 123 F.3d 599 (7th Cir. 1997)	25
<i>Brokerage Concepts, Inc. v. U.S. Healthcare, Inc.</i> , 140 F.3d 494 (3d Cir. 1998).....	20, 22
<i>In re Bulk (Extruded) Graphite Products Antitrust Litig.</i> , 2006 WL 891362 (D.N.J. April 4, 2006).....	15
<i>Butler v. Sears, Roebuck & Co.</i> , 727 F.3d 796 (7th Cir. 2013)	10

<i>Carnegie v. Household Int’l, Inc.</i> , 376 F.3d 656 (7th Cir. 2004)	30
<i>Carrera v. Bayer Corp.</i> , 727 F.3d 300 (3d Cir. 2013).....	10
<i>In re Catfish Antitrust Litig.</i> , 826 F. Supp. 1019 (N.D. Miss. 1993)	13
<i>In re Chocolate Confectionary Antitrust Litig.</i> , 289 F.R.D. 200 (M.D. Pa. 2012).....	13, 14, 26
<i>Cohlmia v. St. John Medical Ctr.</i> , 693 F.3d 1269 (10th Cir. 2012)	23
<i>Collins v. Int’l Dairy Queen</i> , 189 F.R.D. 689 (M.D. Ga. 1999)	16, 30
<i>In re Cox Enters., Inc. Set-Top Cable Television Box Antitrust Litig.</i> , No. 12-ML-2048-C, 2014 WL 104964 (W.D. Okla. Jan. 9, 2014)	<i>passim</i>
<i>Eastman Kodak Co. v. Image Technical Servs., Inc.</i> , 504 U.S. 451 (1992).....	17
<i>In re Flat Glass Antitrust Litig.</i> , 191 F.R.D. 472 (W.D. Pa. 1999)	16
<i>Freeland v. AT&T Corp.</i> , 238 F.R.D. 130 (S.D.N.Y. 2006)	18
<i>Georgine v. Amchem Prods. Inc.</i> , 83 F.3d 610 (3d Cir. 1996).....	12
<i>Hall v. Bed Bath & Beyond, Inc.</i> , 705 F.3d 1357 (2d Cir. 2013).....	31
<i>Hill v. A-T-O, Inc.</i> , 535 F.2d 1349 (2d Cir. 1976).....	18
<i>In re Hydrogen Peroxide Antitrust Litig.</i> , 552 F.3d 305 (3d Cir. 2008).....	10, 26
<i>Ill. Tool Works, Inc. v. Indep. Ink, Inc.</i> , 547 U.S. 28 (2006).....	17, 20
<i>In re Ins. Brokerage Antitrust Litig.</i> , 618 F.3d 300 (3d Cir. 2010).....	16

<i>Jefferson Parish Hosp. Dist. No. 2 v. Hyde</i> , 466 U.S. 2 (1984).....	1, 17, 25
<i>Johnson v. Ariz. Hosp. and Healthcare Ass’n</i> , No. CV 07–1292–PHX–SRB, 2009 WL 5031334 (D. Ariz. 2009).....	31
<i>Kaiser Aluminum & Chemical Sales, Inc. v. Avondale Shipyards, Inc.</i> , 677 F.2d 1045 (5th Cir. 1982)	29
<i>In re Linerboard Antitrust Litig.</i> , 203 F.R.D. 197 (E.D. Pa. 2001).....	13
<i>Little Caesar Enters., Inc. v. Smith</i> , 172 F.R.D. 236 (E.D. Mich. 1997)	19
<i>In re Live Concert Antitrust Litig.</i> , 247 F.R.D. 98 (C.D. Cal. 2007).....	21
<i>Marchese v. Cablevision Sys. Corp.</i> , No. 10-2190 JLL, 2012 WL 78205 (D.N.J. Jan. 9, 2012)	<i>passim</i>
<i>In re Mercedes-Benz Antitrust Litig.</i> , 213 F.R.D. 180 (D.N.J. 2003).....	15, 16
<i>In re Mercedes-Benz Tele Aid Contract Litigation</i> , 257 F.R.D. 46 (D.N.J. 2009).....	32
<i>In re Merck & Co. Inc., Vytarin/Zetia Securities Litig.</i> , No. 08–2177 (DMC), 2012 WL 4482041 (D.N.J. Sept. 25, 2012).....	12
<i>New Directions Treatment Servs. V. City of Reading</i> , 490 F.3d 293 (3d Cir. 2007).....	14
<i>Northern v. McGraw-Edison Co.</i> , 542 F.2d 1336 (8th Cir. 1976)	29
<i>In re OSB Antitrust Litig.</i> , No. 06-826, 2007 WL 2253425 (E.D. Pa. Aug. 3, 2007)	10, 26
<i>In re Prudential Ins. Co. Am. Sales Practices Litig. Agent Actions</i> , 148 F.3d 283 (3d Cir. 1998).....	13, 16
<i>In re Rubber Chems. Antitrust Litig.</i> , 232 F.R.D. 346 (N.D. Cal. 2005).....	13
<i>Schwartz v. Avis Rent A Car Sys., LLC</i> , No. 11–4052 (JLL), 2014 WL 4272018 (D.N.J. Aug. 28, 2014)	11

<i>Stewart v. Abraham</i> , 275 F.3d 220 (3d Cir. 2001).....	11
<i>Sullivan v. DB Invs., Inc.</i> , 667 F.3d 273 (3d Cir. 2011) (en banc).....	11
<i>Tekdoc Servs. LLC v. 3i–Infotech Inc.</i> , No. 09–6573 (MLC), 2012 WL 3564174 (D.N.J. Aug. 17, 2012)	31
<i>Tic-X-Press, Inc. v. Omni Promotions Co. of Ga.</i> , 815 F.2d 1407 (11th Cir. 1987)	18, 25
<i>U.S. v. Calmar, Inc.</i> , 612 F. Supp. 1298 (D.N.J. 1985)	23
<i>United States Steel Corp. v. Fortner Enters., Inc. (Fortner II)</i> , 429 U.S. 610 (1977).....	22, 25
<i>United States v. Eastman Kodak Co.</i> , 63 F.3d 95 (2d Cir. 1995)	25
<i>In re Urethane Antitrust Litig.</i> , 251 F.R.D. 629 (D. Kan. 2008).....	11
<i>In re Urethane Antitrust Litig.</i> , 768 F.3d 1245 (10th Cir. 2014)	10
<i>In re Visa Check/Mastermoney Antitrust Litig.</i> , 192 F.R.D. 68 (E.D.N.Y. 2000)	17
<i>In re Vitamins Antitrust Litig.</i> , 209 F.R.D. 251 (D.D.C. 2002).....	16
<i>Wal-Mart Stores, Inc. v. Dukes</i> , 131 S. Ct. 2541 (2011).....	11, 12
Other Authorities	
Fed. R. Civ. P. 23	<i>passim</i>
Herbert Hovenkamp, <i>Federal Antitrust Policy: The Law of Competition and Its Practice</i> § 7.6c (3d ed. 2005).....	17, 20
Herbert Hovenkamp, <i>Tying Arrangements and Class Actions</i> , 36 VAND.L. REV. 213 (1983).....	17
U.S. Dep’t of Justice and Federal Trade Comm’n, <i>Horizontal Merger Guidelines</i> (revised Aug. 19, 2010)	24

Phillip Areeda & Herbert Hovenkamp <i>Antitrust Law</i> (2d ed. 2000)	18, 19
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INTRODUCTION

Plaintiffs Gary Marchese, Esther Weinstein, and Joan Howard (collectively “Plaintiffs”) are Cablevision subscribers in the New York metropolitan area who bring this case on behalf of themselves and a proposed class (further defined below) consisting of all persons in the states of New Jersey, Connecticut, and New York who subscribed to Cablevision’s residential Two Way Services (“TWS”) and paid a monthly rental fee to Cablevision for a cable set-top box during the period April 30, 2004, to the present (the “Class Period”). Plaintiffs allege on behalf of the proposed class that Cablevision has illegally tied TWS (the tying product)¹ to the rental of a set-top box (“STB”) (the tied product) from Cablevision. Specifically, in order to gain access to TWS, class members were required to rent STBs from Cablevision. The illegal tie denies class members access to competitively priced STBs and allows Cablevision, through exercise of its substantial market power, to charge inflated, supracompetitive rates for their STBs.²

Courts routinely certify cases like this, where class members challenge an across-the-board company policy that harms those class members. Indeed, a tying case involving STBs has recently been certified in Oklahoma based on the economic analysis of Dr. Justine Hastings, the same economist who has opined here that the elements of tying, impact, and damages are susceptible to proof through common, classwide evidence and methodologies. *In re Cox Enters.*,

¹ TWS include: (1) the interactive program guide (“IPG”); (2) the ability to order pay-per-view (“PPV”) events using a remote control; (3) Video on Demand (“VOD”); and (4) iO Games.

² In denying Cablevision’s motion to dismiss Plaintiffs’ tying claims under Section 1 of the Sherman Antitrust Act, Judge Linares recognized the anticompetitive effects of tying, quoting *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 12 (1984): “Our cases have concluded that the essential characteristic of an invalid tying arrangement lies in the seller’s exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms. When such ‘forcing’ is present, competition on the merits for the tied item has been restrained, and the Sherman Act violated.” *Marchese v. Cablevision Sys. Corp.*, No. 10-2190 JLL, 2012 WL 78205, at *15 (D.N.J. Jan. 9, 2012).

Inc. Set-Top Cable Television Box Antitrust Litig., No. 12-ML-2048-C, 2014 WL 104964, at *10 (W.D. Okla. Jan. 9, 2014). The result should be the same here, as the proposed class meets all of the requirements for certification.

This action easily fulfills the requirements for certification under Rule 23. The four elements of Rule 23(a) are satisfied because: (1) class members number in the millions (numerosity); (2) there are a multitude of questions of law and fact common to the class (commonality); (3) Plaintiffs and class members alike were subjected to Cablevision's tie and paid inflated prices for their STBs (typicality); and (4) Plaintiffs and their counsel have shown that they can and will vigorously pursue and protect the interests of the class (adequacy).

In addition, the proposed class meets the requirements of Rule 23(b)(3) because questions of law or fact common to the class "predominate over any questions affecting only individual members" and class treatment is "superior to other available methods for fairly and efficiently adjudicating the controversy." Fed. R. Civ. P. 23(b)(3).

Liability will be determined based on common evidence of the existence and effect of Cablevision's tying conduct. The accompanying expert reports of Dr. Hastings demonstrate that evidence common to the class is available to establish each element of the tying claim (i.e., separate tying and tied products, conditioning or coercion, market power in the tying product market, and a substantial volume of commerce in the tied product). (*See*, Expert Report of Professor Justine S. Hastings, Ph.D., dated August 15, 2014 (the "Hastings Report") attached as Exhibit A to the Declaration of Michael S. Weinstein, Esq. (the "Weinstein Decl.") and Expert Rebuttal Report of Professor Justine S. Hastings, Ph.D., dated November 21, 2014 ("Hastings Rebuttal") attached as Weinstein Decl. Ex. B.)

Common evidence will also show the anticompetitive effects of Cablevision's tying scheme. For example, common evidence will show that, while the prices paid by Cablevision to acquire STBs [REDACTED], the price that Cablevision charged class members for those STBs [REDACTED] dramatically during that same time frame, by [REDACTED]%. (Hastings Report at ¶¶ 31–32.) Thus, unlike [REDACTED]

[REDACTED]. As a result of the tie, Cablevision was able to extract significantly higher prices from consumers even as (1) the STBs aged and (2) [REDACTED]

Dr. Hastings's reports also demonstrate that evidence common to the class is available to establish the fact of classwide injury (impact) from the tying conduct, and that a formula consistent with standard and applicable economic principles can be used to calculate the amount of damages. (Hastings Report at ¶¶ 126–49; Hastings Rebuttal at ¶¶ 60–89.) As the *Cox* court recently noted in certifying an STB-related tying claim based on Dr. Hastings's damages model:

Put simply, the question is, does Dr. Hastings' damages model redress the harm suffered by class members? As noted above, the proposed class seeks damages for an alleged antitrust violation. Whether that violation arises from being unable to purchase an STB or from being forced to rent one, the central issue is the same—Defendant's conduct restrains competition and its power allows it to gain an unfair profit while doing so. The damage model provides a method to redress that harm The model further makes this determination based on evidence that is common to the class. Whether or not the trier of fact ultimately determines the model accurately calculates damages, if any exist, is for another day.

Cox, 2014 WL 104964 at *12–13. Likewise here, Plaintiffs have demonstrated predominance of common issues on antitrust impact and damages.

Certifying a class, moreover, would facilitate the efficient adjudication of what otherwise would be, if brought individually, millions of effectively identical actions, or, alternatively, no adjudication given the relatively small value of the individual claims in comparison to the costs of litigation. The class-action device was created to accommodate this type of proceeding. The proposed class, as defined below, should be certified and this matter should proceed onto the merits phase.

PROCEDURAL BACKGROUND

This action was filed on April 30, 2010. On January 9, 2012, the Court denied Defendants' motion to dismiss the Section 1 tying claim and the unjust enrichment claims. *Marchese*, 2012 WL 78205 at *11. The Court determined that Plaintiffs properly alleged all the required elements of a *per se* tying claim under Section 1 of the Sherman Act.:

In order to make out a §1 *per se* tying claim, a plaintiff must appropriately allege facts indicating: (1) a defendant seller tied two distinct products, conditioning sale of one product on the purchase of a different tied product; (2) the seller possesses market power in the tying product market; and (3) a substantial amount of interstate commerce is affected. For the following reasons, the Court finds that Plaintiffs have sufficiently alleged facts stating a §1 *per se* tying claim.

Id. at *2 (citations omitted).

The Court specifically found that Plaintiffs adequately alleged each of these elements. First, Plaintiffs adequately alleged that TWS constituted an appropriate tying product and that cable STBs that provide access to Cablevision's TWS constituted an appropriate tied product, stating that: "The Court finds that Plaintiffs have alleged sufficient facts regarding valid distinct products markets within the designated geographic market." *Id.* Second, the Court also determined that Plaintiffs had properly pled conditioning by Cablevision because Plaintiffs' ability to receive TWS is conditioned on renting STBs from Cablevision. *Id.* at *18.

Third, the Court determined that Plaintiffs properly alleged Cablevision's significant market power in TWS, stating: "The Court disagrees that Plaintiffs have not sufficiently alleged facts regarding Defendant's market power in the tying market of Two Way Services in their Third Amended Complaint." *Id.* at *20. Fourth, the Court determined that Plaintiffs adequately alleged (and Cablevision did not contest) that a substantial amount of interstate commerce is affected. *Id.* at *21.

Finally, the Court found that because "Plaintiffs have sufficiently pled facts regarding a *per se* tying violation, the requisite elements generally required for proving a tying violation under a rule of reason analysis—causation of antitrust injury and rebutting procompetitive justifications for a tie-in—need not be assessed at this time." *Id.*³

Following denial of the motion to dismiss, the Court bifurcated discovery, with only class discovery proceeding to date. As part of class discovery, Plaintiffs have produced documents, answered interrogatories, and been deposed. Plaintiffs' counsel reviewed millions of pages of documents produced by Cablevision as well as a number of non-parties, analyzed several terabytes of data, and deposed a dozen of Cablevision's current or former employees. Plaintiffs' economist, Dr. Hastings, produced an expert report and a rebuttal expert report responding to the expert reports propounded by Cablevision's experts, Dr. Gerald Hall and Dr. Lauren Stiroh.

Plaintiffs deposed Cablevision's experts and Cablevision deposed Dr. Hastings twice.

³ As the Court explained: "To sufficiently assert a tying claim under a rule of reason theory of liability, plaintiffs need not prove that the seller has market power in the tying product market, but must set forth 1) a viable theory of causation of antitrust injury in that a defendant's alleged tying resulted in anticompetitive effects (e.g., through the forced purchase of inferior goods, consumer surprise, difficulty in consumer ability to make proper price comparisons, or foreclosure of the tied product market); and 2) a rebuttal at trial of defendant's procompetitive justifications, if any. Rule of reason claims are still available to plaintiffs who do not succeed in their *per se* tying claims." *Marchese*, 2012 WL 78205 at *21 (citations omitted). If Plaintiffs ever had to resort to a rule of reason claim, the additional elements would be subject to common proof.

CLASS DEFINITION

Plaintiffs propose a slightly narrower class than alleged in the complaint,⁴ limiting the class to subscribers to Cablevision’s residential TWS, which, according to Cablevision’s data, constitutes over [REDACTED] of Cablevision subscribers. (Hastings Rebuttal at ¶ 137.) Residential subscribers are identifiable from Cablevision’s records, and are distinguishable from subscribers categorized by Cablevision as bulk, commercial, municipal, or free subscribers. *Id.*

Plaintiffs bring this action both individually and as a class action on behalf of the following class of persons (the “Class”): All persons in the states of New Jersey, Connecticut, and New York who subscribed to Cablevision’s residential Two Way Services and paid a monthly rental fee to Cablevision for a cable set-top box during the period April 30, 2004 to the present (the “Class Period”). Excluded from the Class are Cablevision and its officers, directors, employees, affiliates and subsidiaries, and any Judges to whom this case is or may be assigned and any member of those Judges’ immediate families, those Judges’ law clerks and their immediate families, and any other judicial officers who are or may be assigned to this case and their immediate families.

FACTUAL BACKGROUND

Cablevision is one of the largest providers of cable multi-channel video programming distribution (“MVPD”) in the country, providing cable service in its New York, New Jersey, and Connecticut Tri-State Footprint. (Hastings Report at ¶ 13.) Cablevision offers MVPD services in different tiers and packages: (1) “Broadcast Basic,” an entry-level service tier that includes broadcast television signals (ABC, NBC, etc.); (2) “Family Cable”/“iO Value,” referred to by the FCC as “Expanded Cable Service,” which includes the basic service tier plus several popular national cable channels, such as Nickelodeon and ESPN; and (3) “iO,” referred to by the FCC as

⁴ The class definition may be altered or amended as litigation proceeds. *Allen v. Holiday Universal*, 249 F.R.D. 166, 170–71 n.2 (E.D. Pa. 2008) (“This definition of the Class is slightly modified from the definition set forth in the Complaint. Modifying a class definition is contemplated by the Federal Rules of Civil Procedure, and a court is not bound by the class definition proposed in the complaint.” (internal citations and quotation omitted)).

“digital video,” which includes a number of channels as well as interactive TWS. (*Id.* at ¶¶ 14–17.) Class members subscribe to TWS through subscriptions to iO packages. (*Id.* at ¶ 6.) TWS include (1) the IPG; (2) the ability to order PPV events using a remote control; (3) VOD; and (4) iO Games. (*Id.* at ¶¶ 5, 17, 37.) The IPG enables subscribers to search and navigate quickly through their channel lineup, while VOD, PPV, and iO games allow subscribers to utilize and view a vast array of programming and content. (Hastings Rebuttal at ¶¶ 22–24, 98.)

TWS and STBs constitute two separate products. (Hastings Report at ¶ 37–43.) Cablevision bills separately for TWS and STBs, and [REDACTED]; Cablevision subscribers lease STBs in a variable ratio to TWS subscriptions; and, as evidenced in Canada, STBs are sold separately from cable services and Canadian consumers have been able to acquire STBs from, *inter alia*, electronics retailers. (*Id.* at ¶¶ 38–42.)

Cablevision ties TWS subscriptions to the rental of STBs from Cablevision. As this Court recognized, Plaintiffs and class members subscribe to TWS as part of subscriptions to iO cable packages. *Marchese*, 2012 WL 78205 at *2. Subscribers are charged a monthly service fee for subscriptions that include TWS, and a separate monthly fee for each STB that they are required to rent in order to access TWS. (Hastings Report at ¶¶ 38, 40, 47.) Class members cannot, for example, receive the TWS to which they subscribe without renting an STB from Cablevision: subscribers cannot receive TWS by renting CableCARDS. (*Id.* at ¶ 45.) As a matter of company policy, subscribers must rent these STBs from Cablevision; i.e.: a subscription that includes TWS is conditioned on the rental of a Cablevision STB. (*See Id.* at ¶ 46 [REDACTED] (quoting CVC-Marchese-00319929)).)

Cablevision does not manufacture STBs: the STBs are purchased from third-party manufacturers and then leased to subscribers [REDACTED]. (*Id.* at ¶¶ 31–32.) The STBs that Cablevision purchases from its STB suppliers, namely Scientific Atlanta/Cisco and Samsung, are of the same make and model as are deployed by numerous MVPDs throughout the United States. (Fifth Am. Compl. (“FiAC”) (ECF No. 144) at ¶ 14.) Similar STBs are also deployed by Canadian MVPDs. (Hastings Report at ¶ 136, Appendix III Tables 1 and 2.) But Canadian subscribers are able to acquire those STBs from their MVPDs, from consumer electronics retailers such as Best Buy, and through services like eBay and Kajiji. (*Id.* at ¶¶ 33, 136; Hastings Rebuttal at ¶¶ 12 n.18, 80 n.147.)

Cablevision exercised considerable market power in the TWS market throughout the class period. The TWS market is comprised, solely, of other MVPDs providing TWS, such as Verizon, AT&T, and—conservatively—satellite providers. (Hastings Report at ¶¶ 62–65.) These are the only companies that Cablevision [REDACTED]. (*Id.*) Physical video-distribution venues, such as Blockbuster and public libraries, [REDACTED] [REDACTED] (*id.* at ¶ 27), and online video distributors (“OVDs”), such as Netflix, did not enter the market until late in the class period and, even then, [REDACTED] [REDACTED] (*id.* at ¶¶ 66–71 [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] (alteration in original; quoting CVC-Marchese-00468640))).

Cablevision’s considerable market power is evidenced by its large market share, which conservatively remained above [REDACTED] throughout the class period. (*Id.* at ¶¶ 93–101 Tables 4, 5,

Appendix IV, Tables 1–2.) Cablevision enjoyed its dominant market share in a market characterized by high barriers to entry. Not only is a tremendous amount of capital required (*id.* at ¶¶ 102–05), but the presence of incumbent cable operators is a profound deterrent to entry, a fact evident in the balkanization of the country into MVPD-dominated areas (*id.* at ¶¶ 106–07 [REDACTED]).” (quoting Nuzzo Dep. 155:13–24, May 7, 2014))).

Moreover, Cablevision's market power is demonstrated by the fact that Cablevision engages in systematic and persistent price discrimination. (*Id.* at ¶¶ 110–19.)

Cablevision used its market power in the TWS market to condition the sale of TWS on the lease of an STB from Cablevision, thereby depriving class members of any meaningful choice when selecting an STB. (*Id.* at ¶¶ 20, 30.) Accordingly, Cablevision was able to charge the putative class members supracompetitive prices for their STBs. (*Id.* at ¶¶ 126–135). [REDACTED]

(*Id.* at ¶¶ 30–32.)⁵ Cablevision could not have maintained such inflated prices in a competitive market. (*Id.*)

LEGAL STANDARDS

Plaintiffs' burden at class certification is to satisfy the threshold requirements of Rule 23(a) (i.e., numerosity, commonality, typicality, and adequacy) and Rule 23(b)(3)'s requirements

⁵ Cablevision was also able to charge more for old STBs than it charged for those STBs when new. [REDACTED]

of predominance and superiority. Any “[f]actual determinations necessary to make Rule 23 findings must be made by a preponderance of evidence.” *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d 305, 320 (3d Cir. 2008).

The trial court must conduct a rigorous analysis to determine whether the Rule 23 requirements have been satisfied. *Amgen Inc. v. Conn. Ret. Plans*, 133 S.Ct. 1184, 1194 (2013); *Carrera v. Bayer Corp.*, 727 F.3d 300, 306 (3d Cir. 2013). But the court’s inquiry is not “free-ranging”: “[m]erits questions may be considered to the extent—but only to the extent—that they are relevant to determining whether the Rule 23 prerequisites for class certification are satisfied.” *Amgen*, 133 S. Ct. at 1194-95; *Hydrogen Peroxide*, 552 F.3d at 317.

Plaintiffs’ burden is only to demonstrate that their claims are “capable of proof at trial” through predominantly common evidence. *Id.* at 311–12. They “need not actually prove” their claims. *In re OSB Antitrust Litig.*, No. 06-826, 2007 WL 2253425, at *6 (E.D. Pa. Aug. 3, 2007). Moreover, the predominance inquiry is an evaluation of Plaintiffs’ claims as a whole, “it is not bean counting.” *Butler v. Sears, Roebuck & Co.*, 727 F.3d 796, 801 (7th Cir. 2013), *cert. denied*, 134 S. Ct. 1277 (2014). “Rule 23(b)(3) . . . does not require a plaintiff seeking class certification to prove that each element of [her] claim [is] susceptible to classwide proof.” *Amgen*, 133 S. Ct. at 1196 (quotations omitted). Rather, it requires only a showing that “the questions of law or fact common to class members predominate over any questions affecting only individual members.” *In re Urethane Antitrust Litig.*, 768 F.3d 1245, 1253 (10th Cir. 2014) (internal quotations and citation omitted).

Courts have repeatedly found antitrust claims particularly well suited for class actions. The Supreme Court has observed that “[p]redominance is a test readily met in certain cases alleging . . . violations of the antitrust laws.” *Anchem Prods, Inc. v. Windsor*, 521 U.S. 591, 625

(1997). This is because, in antitrust matters, defendants’ conduct is ordinarily the central issue. *Sullivan v. DB Invs., Inc.*, 667 F.3d 273, 298 (3d Cir. 2011) (en banc); *In re Urethane Antitrust Litig.*, 251 F.R.D. 629, 635 (D. Kan. 2008), *aff’d*, 768 F.3d 1245 (10th Cir. 2014).

ARGUMENT

I. THE CLASS MEETS THE REQUIREMENTS OF RULE 23(a).

To be certified, a class must meet four criteria identified in Federal Rule of Civil Procedure 23(a), namely that (1) the class is so numerous that joinder of all members is impracticable (numerosity); (2) there are questions of law or fact common to the class (commonality); (3) the claims or defenses of the representative parties are typical of the claims or defenses of the class (typicality); and (4) the representative parties will fairly and adequately protect the interests of the class (adequacy). These requirements are all met in this case.

A. Numerosity Is Satisfied.

Numerosity requires the members of a class to demonstrate the class is so numerous that “joinder of all members is impracticable.” Fed. R. Civ. P. 23(a)(1). Numerosity is generally satisfied where a proposed class exceeds 40 class members. *Stewart v. Abraham*, 275 F.3d 220, 226-27 (3d Cir. 2001). As the proposed class here contains over two million members (Hastings Report at ¶ 38), the numerosity requirement is easily satisfied.

B. There Are Questions Of Law And Fact Common To All Proposed Class Members.

With regard to commonality, the existence of *at least one* common question of fact or law between the Plaintiffs’ claims and those of the class is sufficient. *See Wal-Mart Stores, Inc. v. Dukes*, 131 S. Ct. 2541, 2556 (2011) (agreeing that “[f]or purposes of Rule 23(a)(2), even a single common question will do”); *Schwartz v. Avis Rent A Car Sys., LLC*, No. 11–4052 (JLL),

2014 WL 4272018, at *8 (D.N.J. Aug. 28, 2014) (same, citing *Baby Neal For & By Kanter v. Casey*, 43 F.3d 48, 56 (3d Cir. 1994)). As such, “the United States Court of Appeals for the Third Circuit ‘has recognized that courts have set a low threshold for satisfying this requirement.’” *In re Merck & Co. Inc., Vytarin/Zetia Sec. Litig.*, No. 08–2177 (DMC), 2012 WL 4482041, at *3 (D.N.J. Sept. 25, 2012) (quoting *Georgine v. Amchem Prods. Inc.*, 83 F.3d 610, 627 (3d Cir. 1996)).

Here, the same practices—whereby Cablevision customers are required to rent a Cablevision STB to access TWS—“touch and concern all members of the class.” *Wal-Mart*, 131 S. Ct at 2566 n.7. The complained-of tying conduct is a practice that Cablevision applied to Plaintiffs and all members of the class and it is this conduct that serves as the basis for Plaintiffs’ tying claim. A common question—whether Cablevision illegally tied access to TWS to the rental of an STB from Cablevision—arises as to all members of the class and a classwide proceeding will generate a common answer that drives the resolution of the litigation. Questions common to the class include: (1) whether Defendants possessed sufficient power in the TWS market; (2) whether Defendants required subscribers to rent their STBs as a condition of receiving TWS; (3) whether TWS and STBs are considered separate products; and (4) whether, as a result of Defendants’ misconduct, Plaintiffs and the class were charged supracompetitive STB prices. Because answers to these questions can be established with common evidence (i.e., the answers will not vary by class member), common questions exist and the commonality requirement is satisfied. *See, e.g., Cox*, 2014 WL 104964 at *4 (finding commonality based on illegal tie (citing *Wal-Mart*, 131 S. Ct. at 2551)).

C. Plaintiffs' Claims Are Typical Of The Claims Of The Proposed Class.

Plaintiffs' claims are also typical of the claims of the class as a whole, thus satisfying Rule 23(a)(3). Typicality is met in the antitrust context where "plaintiffs and all class members alleg[e] the same antitrust violation by defendants." *In re Rubber Chems. Antitrust Litig.*, 232 F.R.D. 346, 351 (N.D. Cal. 2005). Factual differences between class members do not defeat typicality if the claims arise from the "same event or practice or course of conduct." *Barnes v. Am. Tobacco Co.*, 161 F.3d 127, 141 (3d Cir. 1998); *see also In re Prudential Ins. Co. Am. Sales Practices Litig. Agent Actions*, 148 F.3d 283, 311 (3d Cir. 1998) (finding typicality where the claims asserted by the named plaintiffs and members of the proposed class arose from Prudential's overarching fraudulent scheme). Instead, where there is strong similarity of legal theories, or where the claims arise from the same practice, factual distinctions among the class representatives and the class members do not defeat typicality. *Id.*

Here, Plaintiffs' claims and those of class members arise from the same anticompetitive policy: that Cablevision tied TWS to the rental of STBs from Cablevision, resulting in higher prices for STBs. All class members' claims arise from the same events (Cablevision's illegal tying); are based on the same legal theories (violations of the antitrust laws and unjust enrichment); and seek the same remedy (monetary damages to recover overcharges and cessation of the tying practice). Typicality is thus satisfied. *See In re Chocolate Confectionary Antitrust Litig.*, 289 F.R.D. 200, 217 (M.D. Pa. 2012) ("The claims are typical because they rest upon the same legal theory, and alleged the same injury."); *In re Linerboard Antitrust Litig.*, 203 F.R.D. 197, 207 (E.D. Pa. 2001) (where "it is alleged that the defendants engaged in a common scheme relative to all members of the class, there is a strong assumption that the claims of the representative parties will be typical" (quoting *In re Catfish Antitrust Litig.*, 826 F. Supp. 1019,

1035 (N.D. Miss. 1993))), *aff'd*, 305 F.3d 145 (3d Cir. 2002); *In re Blood Reagents Antitrust Litig.*, 283 F.R.D. 222, 233 (E.D. Pa. 2012) (finding typicality satisfied where all members of the class were direct purchasers and alleged they made their purchases at supracompetitive prices). Indeed, as the court in *Cox* stated in finding typicality: “Plaintiff complains of one policy or conduct that he alleges amounts to an illegal tie. That policy or conduct is the same for Plaintiff and the proposed class members. Thus each have the same legal claim.” *Cox*, 2014 WL 104964 at *4. Plaintiffs here similarly satisfy the typicality requirement.

D. Plaintiffs Will Fairly And Adequately Represent The Class’s Interests.

Finally, Rule 23(a)(4) is met because the named plaintiffs will fairly and adequately protect the interests of the class. Adequacy “is satisfied by showing that (1) Class Counsel is competent and qualified to conduct the litigation; and (2) class representatives have no conflicts of interest.” *Chocolate*, 289 F.R.D. at 218 (citing *New Directions Treatment Servs. V. City of Reading*, 490 F.3d 293, 313 (3d Cir. 2007)). Here the adequacy requirement is plainly met.

No conflict exists between named and unnamed class members because their interests are aligned. Plaintiffs and class members have all been injured by the same anticompetitive conduct. Plaintiffs do not have any interests antagonistic to those of the other class members and all share a strong interest in proving Defendants’ liability. *See Blood Reagents*, 283 F.R.D. at 234 (finding adequacy requirement met where there was “no evidence of any conflict of interest between the named plaintiffs and the absent members of the putative class”). In proving their claims, Plaintiffs will be proving the claims of the class. *Id.*

Plaintiffs are also represented by experienced counsel who have litigated, and will continue to litigate, this case vigorously on behalf of the class. As demonstrated in the firm resumes (see Weinstein Dec. Exs. C–H, attaching resumes of Taus, Cebulash & Landau, LLP;

Berger & Montague, PC; Faruqi & Faruqi, LLP; Gustafson Gluek PLLC; Stoll Stoll Berne Lokting & Schlacter P.C.; and Cole Schotz Meisel Forman & Leonard, P.A.), the firms representing Plaintiffs have extensive experience prosecuting antitrust cases and class actions. *See Blood Reagents*, 283 F.R.D. at 233 (finding representation adequate based on counsel's extensive experience prosecuting complex cases). As a result, the adequacy requirement is satisfied.

II. THIS CASE MEETS THE REQUIREMENTS OF 23(b)(3) BECAUSE QUESTIONS COMMON TO THE CLASS PREDOMINATE AND A CLASS ACTION IS SUPERIOR TO OTHER AVAILABLE METHODS.

In addition to the four requirements of Rule 23(a), the proposed class must also satisfy at least one provision of Rule 23(b). Rule 23(b)(3) is satisfied when: (1) the questions of law or fact common to the class predominate over any questions affecting only individual class members (predominance); and (2) a class action is superior to other available methods for the fair and efficient adjudication of the controversy (superiority). Fed. R. Civ. P. 23(b)(3); *Anchem*, 521 U.S. at 615. Both of these requirements are met here.

A. Common Questions Predominate Because Each Of The Tying-Claim Elements Are Susceptible To Proof Through Common Evidence.

Courts conducting the predominance inquiry must “determine whether the common legal and factual issues are more significant than the non-common issues such that the class is ‘sufficiently cohesive to warrant adjudication by representation.’” *In re Mercedes-Benz Antitrust Litig.*, 213 F.R.D. 180, 186 (D.N.J. 2003) (quoting *Amchem*, 521 U.S. at 623). “[I]n general, predominance is met when there exists generalized evidence which proves or disproves an element on a simultaneous, class-wide basis, since such proof obviates the need to examine each class members’ [sic] individual position.” *In re Bulk (Extruded) Graphite Products Antitrust*

Litig., No. Civ. 02-6030 (WHW), 2006 WL 891362, at *9 (D.N.J. April 4, 2006) (quoting *In re Vitamins Antitrust Litig.*, 209 F.R.D. 251, 262 (D.D.C. 2002)); *Collins v. Int'l Dairy Queen*, 189 F.R.D. 689, at 692-93 (M.D. Ga. 1999) (certifying class because plaintiffs' theory depended on defendants' tying conduct "that applies uniformly to all plaintiff class members").

Predominance does not require that every relevant issue before the Court be postured identically for each and every proposed class member, *Anchem*, 521 U.S. at 623; *In re Flat Glass Antitrust Litig.*, 191 F.R.D. 472, 484 (W.D. Pa. 1999), and the existence of some individual inquiries will not defeat predominance, *Prudential*, 148 F.3d at 315; *Mercedes Benz*, 213 F.R.D. at 186.

"In order to determine whether common issues will predominate over individualized issues, the underlying elements of the substantive claim—here, the tying claim—must be identified." *Cox*, 2014 WL 104964 at *6.

"The elements of a Sherman Act § 1 tying violation are well settled. . . . : the existence of a tie, that the seller has sufficient economic power with respect to the tying product to appreciably restrain free competition in the market for the tied product, and that a not insubstantial amount of interstate commerce is affected." *Bogosian v. Gulf Oil Corp.*, 561 F.2d 434, 452 (3d Cir. 1977) (internal quotation marks and citations omitted), *abrogation on other grounds as recognized by In re Ins. Brokerage Antitrust Litig.*, 618 F.3d 300, 325 n.25 (3d Cir. 2010); *Marchese*, 2012 WL 78205 at *2. In addition, "[a]ssuming economic market power over the tying product and a not insubstantial amount of commerce, the plaintiff need only show that a seller conditioned the sale of one product (the tying product) on the purchase of another product (the tied product)." *Bogosian*, 561 F.2d at 449. To obtain damages, plaintiffs must also prove an antitrust injury from the alleged tying. *Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 334 (1990); *Allen-Myland, Inc. v. Int'l Bus. Machs. Corp.*, 33 F.3d 194, 201 (3d Cir. 1994).

Each of these elements is susceptible of proof through common evidence, as demonstrated by Dr. Hastings.

1. Separate Tying And Tied Products.

In order for products to be considered separate for purposes of a tying claim, “there must be sufficient consumer demand so that it is efficient for a firm to provide [one product] separately from [the other].” *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 462 (1992); *see also Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 19 (1984), *abrogation on other grounds recognized by Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 31 (2006) (separate-products inquiry “turns not on the functional relation between [the tying and tied products], but rather on the character of the demand for the two items”). For class certification purposes, “[t]he courts uniformly consider the issue whether the tying arrangement consists of separate tying and tied products to be common to all members of the class.” *In re Visa Check/Mastermoney Antitrust Litig.*, 192 F.R.D. 68, 87 (E.D.N.Y. 2000) (quoting Herbert Hovenkamp, *Tying Arrangements and Class Actions*, 36 VAND.L. REV. 213, 220 (1983)). This Court, in denying Defendants’ motion to dismiss, found that TWS and STBs were sufficiently alleged to be separate products. *Marchese*, 2012 WL 72805 at *2. This view is susceptible to proof by the following common evidence (among others):

- (1) Cablevision treats its STBs and TWS as separate products, requiring a separate STB (and corresponding rental charge) for each TV on which the consumer wishes to access TWS (i.e., there is a variable proportion between the number of subscribers receiving TWS and the quantity of STBs a single household may have);
- (2) [REDACTED];
- (3) Cablevision lists the charge for renting an STB separately in its published rate cards, customer ledgers, and customer bills;
- (4) Canadian MVPDs and retailers such as Best Buy sell STBs separately from TWS; and

- (5) The FCC and Congress have assumed that STBs are a separate product from multichannel video programming services, and that rival firms should compete to produce innovative STBs sold at retail.

(See Hastings Report at ¶¶ 37–43 and documents cited therein.) All of these facts are common to the class and establish that Plaintiffs will be able to use common evidence to show that the tying and tied products are separate. *Cox*, 2014 WL 104964 at *8.

2. Condition Or Coercion.

A company ties two separate products when it conditions purchases of the tying product upon purchases of the tied product. *Bogosian*, 561 F.2d at 449; *Marchese*, 2012 WL 78205 at *15. It can enforce or effectuate the tie via various means, including publicly announcing the tie, *see, e.g.*, X. Phillip Areeda & Herbert Hovenkamp *Antitrust Law* §§ 1754b, 1754d (2d ed. 2000), or creating a situation where the “practical economic effect” coerces people to acquire the tied product. *Bogosian*, 561 F.2d at 452; *Tic-X-Press, Inc. v. Omni Promotions Co. of Ga.*, 815 F.2d 1407, 1418 (11th Cir. 1987). Further, conditioning can be proven on a classwide basis by the defendant’s admission of conditioned sales. *Cox*, 2014 WL 104964 at *9 (“there is direct, common evidence of classwide policies, practices, and statements that Cox customers had to rent a Cox STB in order to participate in the full panoply of digital services”); *see also Hill v. A-T-O, Inc.*, 535 F.2d 1349, 1355 (2d Cir. 1976); *Freeland v. AT&T Corp.*, 238 F.R.D. 130, 154 (S.D.N.Y. 2006).

Here, as demonstrated by Dr. Hastings, common evidence can be used to prove that Cablevision conditioned customers’ purchases of TWS on the rental of STBs, including:

- (1) [REDACTED]

(2) Statements from Cablevision, including on its website, that subscribers must rent an STB from Cablevision in order to receive TWS (e.g., that a subscriber cannot receive TWS by renting a CableCARD); and

(3) [REDACTED]

(See Hastings Report at ¶¶ 18, 44–48 and documents cited therein.) Thus, as in *Cox*, proving that the purchase of TWS is conditioned on the rental of an STB from Cablevision can be done with evidence common to the class.

Moreover, to the extent Cablevision argues as much, individualized evidence of class members' beliefs about coercion is unnecessary, because coercion is determined using objective, and not subjective, measurements. As the Third Circuit held in *Bogosian*: "The issue is whether the seller acted in a certain way, not what the buyer's state of mind would have been absent the seller's action [O]nce a plaintiff proves that a defendant has conditioned the sale of one product upon the purchase of another there is no requirement that he prove that his purchase was coerced by the seller's requirement." 561 F.2d at 450; see also *Little Caesar Enters., Inc. v. Smith*, 172 F.R.D. 236, 254 (E.D. Mich. 1997) (an illegal tying arrangement "is not made legal by the fact that the buyers would have purchased the defendant's product without regard to the tie" because "[t]he relevant question is whether the seller has illegitimately constrained buyer choices"); Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 1754 at 313 (3rd ed. 2011) ("[T]here is no need to inquire into subjective belief once the tribunal is persuaded that the circumstances generate a reasonable belief that a tying condition exists, for subjective beliefs can be inferred from objective circumstances.").

3. Market Power.

To prove their tying claims, Plaintiffs must be able to demonstrate that Cablevision “has market power in the tying product.” *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 46 (2006); *Marchese*, 2012 WL 78205 at *18. To prove market power, Plaintiffs must provide evidence of a relevant product market and a relevant geographic market. *Brokerage Concepts, Inc. v. U.S. Healthcare, Inc.*, 140 F.3d 494, 513 (3d Cir. 1998), *aff’d sub nom. Brokerage Concepts v. U.S. Healthcare, Inc.*, 251 F.3d 153 (3d Cir. 2000). Here, the product market, the geographic market, and Cablevision’s power in the resulting relevant market can and will be proven by common evidence.

a. **The Tying Product Market Is Two Way Services.**

Plaintiffs define the tying product market as Cablevision’s TWS. (*See* FiAC at ¶¶ 3, 37–40; Hastings Report at ¶ 5.) This Court has already held that Plaintiffs have alleged facts demonstrating that TWS offered in Cablevision’s Tri-State Footprint is the relevant product market. *Marchese*, 2012 WL 78205 at *2–5.

Plaintiffs now have evidence that supports their allegations. The relevant tying product market consists of TWS offered in Cablevision’s Tri-State Footprint by Cablevision, DirectTV, DISH Network, AT&T U-verse, and Verizon FiOS. Plaintiffs can establish this with common evidence, including Cablevision’s own documents and deposition testimony, which (1) provide substantial “practical indicia” indicating that TWS are not reasonably interchangeable with one-directional service programing (*see* Hastings Report at ¶¶ 55–58 (citing documents)); (2)

demonstrate [REDACTED]

[REDACTED] (*id.* at ¶¶ 59–60); (3) show that Cablevision’s competitors treat packages with and without two-way services as separate products

and the majority provides only packages with two-way communication features to their subscribers (*id.* at ¶¶ 61–65); and (4) establish that OVDs should not be included within the relevant tying-product market definition because they are compliments to, not substitutes for, TWS (*id.* at ¶¶ 66–71).

Because the “process of defining the product market will be predominated by common questions” and involves the analysis of “the same data, the same experts, the same industry analysis, and the same application of the same economic tests,” making it “incredibly inefficient to duplicate this analysis in thousands of individual cases,” class treatment is appropriate. *In re Live Concert Antitrust Litig.*, 247 F.R.D. 98, 131 (C.D. Cal. 2007).

b. The Geographic Market Is Cablevision’s Tri-State Footprint.

The relevant geographic market is “the market area in which the seller operates, and to which the purchaser can practicably turn for supplies,” in other words, the area in which suppliers “effectively compete.” *Behrend v. Comcast Corp.*, 655 F.3d 182, 193 (3d Cir. 2011), *rev’d on other grounds*, 133 S. Ct. 1426 (2013); *Marchese*, 2102 WL 78205 at *3.

Plaintiffs define the relevant geographic market as Cablevision’s Tri-State Footprint, which is the area in New York, New Jersey, and Connecticut in which Cablevision operates. (Hastings Report at ¶ 82.) This Court has already found that “considering the commercial realities of the relevant industry at issue in this matter,” it was plausible that Cablevision’s Tri-State Footprint “is the relevant geographic market in which Cablevision operates and effectively competes for Two-Way Services with other providers of said services.” *Marchese*, 2012 WL 78205 at *4. Five other courts have found similar footprints to be plausible geographic markets. *Id.* (collecting cases).

Plaintiffs now have evidence and economic analysis, all of which are applicable classwide, to support their allegations that the relevant geographic market is Cablevision's Tri-State Footprint. This common evidence and analysis includes the following: (1) Cablevision's [REDACTED], industry factors, and barriers to entry apply throughout its Tri-State Footprint; (2) Cablevision's [REDACTED]; (3) Cablevision's market [REDACTED] exists throughout its Tri-State Footprint; (4) [REDACTED];⁶ (5) Cablevision [REDACTED]; and (6) Cablevision's business documents track video service subscriber counts and market shares for Cablevision and rival MVPDs operating in its Tri-State Footprint. (Hastings Report at ¶¶ 82–92.)

c. Cablevision Has Substantial Market Power In The Market For Two Way Services In Its Tri-State Footprint.

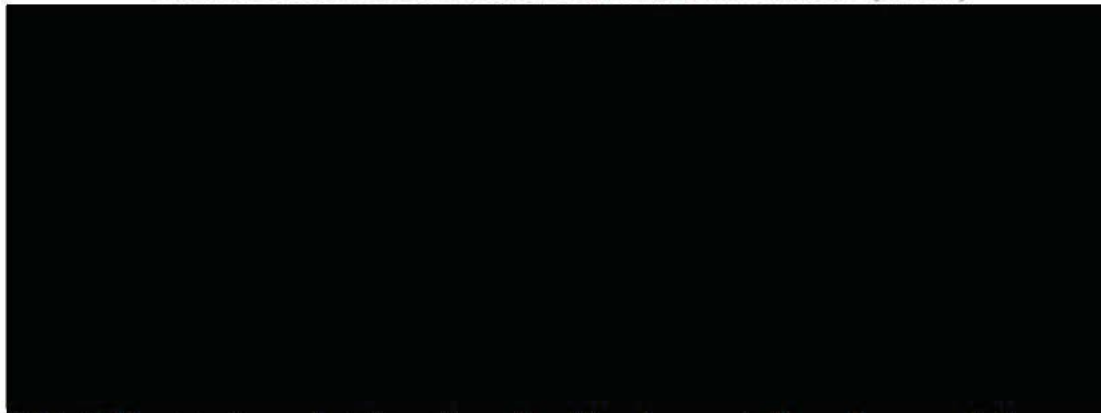
“Market power is defined as the ability to ‘raise prices or to require purchasers to accept burdensome terms that could not be exacted in a completely competitive market.’” *Allen–Myland*, 33 F.3d at 200 (quoting *United States Steel Corp. v. Fortner Enters., Inc. (Fortner II)*, 429 U.S. 610, 620 (1977)). Market power is often inferred from the defendant's possession of a predominant share of the market. *Brokerage Concepts, Inc.*, 140 F.3d at 516 (citing *Kodak*, 504 U.S. at 464). “The minimum market share” for successful tying claims “hovers in the range of 30–40%.” Herbert Hovenkamp, *Federal Antitrust Policy: The Law of Competition and Its Practice* § 7.6c (3d ed. 2005). Market power can also be demonstrated by showing acceptance of the tie by analyzing the relevant market structure, including the number of competitors,

⁶ Cablevision has stated that its “[REDACTED]” (Hastings Report at ¶ 84 (emphasis added; quoting CVC-Marchese-03185989 at 990).)

market share of each competitor, concentration, and barriers to entry. *See Cohlmia v. St. John Medical Ctr.*, 693 F.3d 1269, 1282 (10th Cir. 2012).

Here, classwide evidence from Cablevision's own business documents and records establishes Cablevision's dominant market share. Based on Cablevision's Form 10-Ks and [REDACTED], Dr. Hastings has conservatively calculated Cablevision's average market share for TWS subscribers in Cablevision's Tri-State Footprint for the period of [REDACTED] [REDACTED]. (See Hastings Report at ¶¶ 93–95.)

TWO WAY SERVICES SUBSCRIBER MARKET SHARES AND HHI STATISTICS (MEDIAN)



(*Id.* at ¶ 94.) Cablevision's market share throughout the class period greatly exceeds the threshold necessary to establish market power.

The structure of the relevant market further demonstrates Cablevision's market power and is supported by common, classwide evidence. Dr. Hastings calculated Cablevision's Herfindahl-Hirschman Index ("HHI") score for each year. As Dr. Hastings indicates, the HHI is a well-accepted model of competition, which provides a measure of a firm's market power given the positive relationship between industry concentration and price mark-up over cost. (Hastings Report at ¶¶ 26–28 (citing Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 283)); *see generally U.S. v. Calmar, Inc.*, 612 F. Supp. 1298, 1301 (D.N.J. 1985).) The HHI is relied upon by antitrust regulators, including the DOJ and FTC, classifying markets into three categories:

- Unconcentrated Markets: HHI below 1,500;
- Moderately Concentrated Markets: HHI between 1,500 and 2,500; and
- Highly Concentrated Markets: HHI above 2,500.

(Hastings Report at ¶ 98 (citing U.S. Dep’t of Justice and Federal Trade Comm’n, *Horizontal Merger Guidelines* (revised Aug. 19, 2010), § 5.30).) As noted in the table above, the HHI here [REDACTED] the DOJ/FTC *Horizontal Merger Guideline*’s threshold of 2,500 for a Highly Concentrated Market. (Hastings Report at ¶ 99.)

Plaintiffs will also be able to establish substantial barriers to entry in the relevant markets via common evidence. Entry of a new TWS product would require a new company to enter the MVPD market. With respect to cable companies, new entrants must incur large sunk costs to construct their networks. The cost to provide technical infrastructure for delivery of advanced video to homes is substantial. (Hastings Report at ¶ 102 (citing the FCC’s Thirteenth Annual Report for its Annual Assessment of the Status of Competition of Video Programming, MB Docket No. 06-189 (adopted Nov. 27, 2007) ¶ 52 (cable operators had invested over \$100 billion to construct incremental advanced two-way fiber networks); CVC-Marchese-01673087 at 88 (“[REDACTED]”)).) Cablevision’s incumbent position is also a significant barrier to entry. (See Hastings Report at ¶¶ 106–07.) [REDACTED] [REDACTED] (Hastings Report at ¶ 107 (quoting Nuzzo Dep. at 155:13–24).)

Cablevision’s market power is also supported by common evidence of Cablevision’s power to set prices for TWS in its Tri-State Footprint. Cablevision engages in persistent and systematic price discrimination in the market. Common evidence maintained in Cablevision’s

own customer database demonstrates that Cablevision charged [REDACTED]

[REDACTED].⁷ (See Hastings Report at ¶¶ 110–19.) The ability to engage in price discrimination at such a level is probative of a high degree of market power. *See In re Brand Name Prescription Drugs Antitrust Litig.*, 123 F.3d 599, 603 (7th Cir. 1997) (Posner, J.) (“The presence of price discrimination in the economic sense is evidence of the presence of monopoly power—the power to raise price above cost without losing so many sales as to make the price rise unsustainable.”); *United States v. Eastman Kodak Co.*, 63 F.3d 95, 106 n.6 (2d Cir. 1995) (“The theory that price discrimination is one of the indicia of market power . . . has received acceptance in the academic community.”).

4. Classwide Proof Shows That A “Substantial Volume Of Commerce” Is Affected In The STB Market.

Plaintiffs must show that a substantial amount of commerce in the tied product (here STBs) is involved, which is evaluated in terms of dollar volume, not market percentage. *Jefferson Parish*, 466 U.S. at 16; *Allen-Myland, Inc.*, 33 F.3d at 201. This amount is measured by all tied sales; it is not limited to plaintiffs’ purchases and is sufficient as long as the amount is not *de minimis*. *Fortner*, 394 U.S. at 501-02. As little as \$10,091.07 in commerce has been found satisfactory. *Tic-X-Press, Inc. v. Omni Promotions Co. of Ga.*, 815 F.2d 1407, 1419 (11th Cir. 1987).

Here, Plaintiffs proffer evidence, common to the class, that Cablevision’s STB revenues over the period May 2004 through February 2013 in Cablevision’s Tri-State Footprint exceeded [REDACTED]. (Hastings Report at ¶ 49.) There is no question that this constitutes a substantial

⁷ Cablevision’s iO Silver and iO Gold are its highest tiers of TWS. (Hastings Report at ¶ 114.)

amount of interstate commerce in the tied product and is subject to proof by common evidence.

5. Plaintiffs' Expert Has Offered a Classwide Method to Prove Antitrust Injury.

Common issues likewise predominate with respect to antitrust injury. At the class certification stage, Plaintiffs are not required to actually prove impact or antitrust injury. Rather, Plaintiffs need only demonstrate that the issue is *capable* of being resolved through common evidence. *Hydrogen Peroxide*, 552 F.3d at 311–12; *see also Chocolate*, 289 F.R.D. at 220 (“At the class certification stage, plaintiffs are not tasked with the duty to prove actual antitrust injury. Rather, plaintiffs must show that the element of antitrust impact is *capable of proof* at trial through evidence that is common to the class rather than individual to its members.” (internal quotations omitted)); *OSB*, 2007 WL 2253425 at *6 (“At this stage, Plaintiffs need not actually prove these elements; rather, they must offer a valid and detailed method by which they will do so at trial.”).

The fact of damage is different from the quantum of damage, which can vary from class member to class member and which generally does not bear on class certification. *Bogosian*, 561 F.2d at 456 (“[I]t has been commonly recognized that the necessity for calculation of damages on an individual basis should not preclude class determination when the common issues which determine liability predominate.”); *Chocolate*, 289 F.R.D. at 222–23 (“[I]t uniformly has been held that differences among the members as to the amount of damages incurred does not mean that a class action would be inappropriate.” (quoting 7AA Charles Alan Wright et al., Fed. Practice and Procedure § 1781 (3d ed. 2005))); 6 Newberg & Conte, *supra*, § 18:27, p. 91.

Where plaintiff offers expert testimony to establish classwide injury, that expert must proffer a model “establishing that damages are capable of measurement on a classwide basis.”

Comcast, 133 S. Ct. at 1432. Dr. Hastings’s model is capable of doing so. As the Court in *Cox* indicated:

Dr. Hastings[] . . . seeks to measure the harm suffered by class members as a result of the single theory advanced by Plaintiff-illegally tying rental of an STB to the purchase of “Premium Cable.” The model further makes this determination based on evidence that is common to the class. Whether or not the trier of fact ultimately determines the model accurately calculates damages, if any exist, is for another day.

Cox, 2014 WL 104964 at *13.

Here, as in *Cox*, Dr. Hastings uses a standard, well-accepted model that finds antitrust impact to all class members and, relatedly, can be used to calculate damages on a classwide basis. As Dr. Hastings explains:

The methodology I use follows the standard market performance methodology presented in well-known Industrial Organization textbooks. I conduct net present value (“NPV”) calculations to calculate competitive monthly rental rates. The NPV methodology used in my damages analysis dates back to Irving Fisher’s work on capital budgeting in the early 1900s, and has been incorporated in countless works including Modigliani and Miller’s Nobel Prize winning work on asset valuation. Moreover, it is used every day by businesses and governments, as discussed below. It is the basis for valuing investments, returns, or capital value over time.

(Hastings Report at ¶ 128.)

Dr. Hastings analyzes evidence common to the class—including information from Cablevision’s own business documents and customer database—to obtain four parameters: (1) Cablevision’s rental rates for STBs in its Tri-State Footprint; (2) Cablevision’s costs of purchasing these STBs; (3) information on the number of years that Cablevision earns rental revenues for these STBs; and (4) Cablevision’s competitive rate of return. (Hastings Report at ¶ 131.) She is able to use this information to calculate the but-for competitive monthly rental rates for given types of STBs by subtracting the competitive monthly rental rate from Cablevision’s actual monthly rental rate, which yields the overcharge, and multiplying the overcharge by the

monthly number of such STBs in Cablevision's Tri-State Footprint, per Cablevision's own documents. (*Id.* at ¶ 134.) Dr. Hastings's calculations, using common evidence, show that the aggregate overcharges for all STBs exceed [REDACTED]. (*Id.* at ¶ 135, Table 7.)

Dr. Hastings also performs two robustness checks utilizing evidence common to the class. As a first robustness check, Dr. Hastings uses data about the Canadian STB market, performing the same calculations as identified previously, but replacing Cablevision's STB acquisition cost with actual prices of STBs in Canada. (*Id.* at ¶¶ 136-144.) This first robustness check shows aggregate overcharges of over [REDACTED].

As a second robustness check on her model, Dr. Hastings employs a retail margins analysis to assess the magnitude of the overcharges shown by her market performance model. (*Id.* at ¶ 145.) Dr. Hastings looks at the STB's expected lifetime, the hypothetical retail price based on Cablevision's cost plus [REDACTED] retail margin estimate, and the present value of Cablevision's rental rates over the STB's lifetime, and then compares the present value to the hypothetical retail price. (*Id.* at ¶¶ 146-48.) This analysis yields overcharges between [REDACTED] [REDACTED] overcharge from the damages model. (*Id.* at ¶¶ 148-49, Table 9.) Dr. Hastings's two checks confirm the soundness of her damages methodology. Plaintiffs, through Dr. Hastings, have offered a viable, robust model for finding antitrust injury and calculating classwide damages using common methodologies and common evidence.

Finally, as required by *Comcast*, this damages model fits the theory of Plaintiffs' tying claim. *Comcast*, 133 S. Ct. at 1433 (model must "measure damages resulting from the particular antitrust injury on which petitioners' liability in this action is premised"). By calculating the price for the tied product in a competitive market, this model is directly responsive to the very evil that the tying doctrine is intended to prevent. As the Court in *Cox* found:

Put simply, the question is, does Dr. Hastings' damages model redress the harm suffered by class members? As noted above, the proposed class seeks damages for an alleged antitrust violation. Whether that violation arises from being unable to purchase an STB or from being forced to rent one, the central issue is the same—Defendant's conduct restrains competition and its power allows it to gain an unfair profit while doing so. The damage model provides a method to redress the harm.

Cox, 2014 WL 104964 at *12; *see also Northern v. McGraw-Edison Co.*, 542 F.2d 1336, 1347 (8th Cir. 1976) (tying damages are measured as “the amount of the overcharge, or the difference between the price paid for the tied items and the fair market value of the tied items at the time of purchase”); *Kaiser Aluminum & Chemical Sales, Inc. v. Avondale Shipyards, Inc.*, 677 F.2d 1045, 1054 (5th Cir. 1982).

B. A Class Action Is Superior To Other Available Methods For The Fair And Efficient Adjudication Of This Controversy.

Plaintiffs' tying claim is a classic example of a claim that should be certified as a class action for fair and efficient adjudication. There are potentially millions of people in the class injured by Cablevision's common course of illegal conduct. This claim involves complicated material, and prosecuting it well has required—and will continue to demand—a significant expenditure of resources. In order to employ the judiciary's and parties' resources most efficiently, as well as to ensure that each class member is best represented, a class action is the superior way to resolve Plaintiffs' tying claim.

The superiority element for class certification asks whether “a class action is superior to other available methods for fairly and efficiently adjudicating the controversy.” Fed. R. Civ. P. 23(b)(3). To that end, Rule 23(b)(3)'s list of pertinent factors for assessing superiority all underscore here how a class action is a superior method of adjudicating Plaintiffs' claims:

(A) the class members' interests in individually controlling the prosecution or defense of separate actions;

- (B) the extent and nature of any litigation concerning the controversy already begun by or against class members;
- (C) the desirability or undesirability of concentrating the litigation of the claims in the particular forum; and
- (D) the likely difficulties in managing a class action.

First, no class member has expressed an interest in individually controlling the prosecution of her own action. In light of the fact that each class member has a relatively small damage claim, combined with the fact that antitrust proceedings are notoriously complicated and lengthy, this is not surprising. *See Graphite Prods.*, 2006 WL 891362 at *16 (“the relatively small purchase price of bulk extruded graphite parts would likely preclude litigating this action outside a class action”); *Carnegie v. Household Int’l, Inc.*, 376 F.3d 656, 661 (7th Cir. 2004) (“The realistic alternative to a class action is not 17 million individual suits, but zero individual suits, as only a lunatic or a fanatic sues for \$30.” (emphasis omitted)).

Second, the potential difficulties, if any, in managing this case as a class action are far outweighed by the advantages of certifying a class. The class, as discussed above, is comprised of millions, and individual cases would waste valuable judicial resources in repeatedly proving the same conduct, creating the risk of numerous and inconsistent judgments concerning the matters now before this Court. The superiority rule—and the class action device more generally—is designed to discourage, not promote, such results, and certifying the class here will conserve substantial resources for this Court and the parties. *Collins*, 186 F.R.D. at 694 (certification of tying claims “represents an efficient use of judicial resources and avoids the potentially large number of individual lawsuits that could result from a ruling requiring each franchisee to adjudicate his claims separately”). For purposes of fairly and efficiently adjudicating the proposed class members’ identical tying claims, the class should be certified.

III. PLAINTIFFS' UNJUST-ENRICHMENT CLAIMS SHOULD BE CERTIFIED FOR CLASS TREATMENT.

The unjust-enrichment claims under New York, New Jersey, and Connecticut law should also be certified.⁸ All three states determine unjust enrichment by analyzing whether “(1) a defendant receives a benefit; (2) defendant’s retention of that benefit would act to the plaintiff’s detriment; and (3) under the circumstances, it would be inequitable for defendant to retain that benefit.” *Tekdoc Servs. LLC v. 3i-Infotech Inc.*, No. 09–6573 (MLC), 2012 WL 3564174, at *4 (D.N.J. Aug. 17, 2012); *see also Hall v. Bed Bath & Beyond, Inc.*, 705 F.3d 1357, 1369–70 (2d Cir. 2013) (“New York precedent establishes that unjust enrichment includes that (1) the other party was enriched, (2) at that party’s expense, and (3) that it is against equity and good conscience to permit the other party to retain what is sought to be recovered.” (quotation omitted)). Differences in state law would not, therefore, present any manageability concerns in trying these claims together.

Moreover, the claim is subject to common proof. This Court has determined that liability for unjust enrichment “hinge[s] on said tying claim.” *Marchese*, 2012 WL 78205 at *26. Liability will thus be established with the same classwide evidence that establishes Cablevision’s liability for tying, and no individual issues need to be adjudicated. *See Johnson v. Ariz. Hosp. and Healthcare Ass’n*, No. CV 07–1292–PHX–SRB, 2009 WL 5031334, at *7 n.4 (D. Ariz. 2009) (certifying antitrust and unjust-enrichment claims where establishing both would

⁸ The state subclasses are defined as: “All persons in the State of New Jersey [or Connecticut or New York] who subscribe to Cablevision’s residential Two Way Services and paid a monthly rental fee to Cablevision for a cable set-top box during the Class Period,” subject to the same exclusions noted in the tying-claim class definition.

require proof of the same facts); *see also In re Mercedes-Benz Tele Aid Contract Litig.*, 257 F.R.D. 46, 72 (D.N.J. 2009) (certifying unjust-enrichment claim).

IV. PLAINTIFFS' COUNSEL SHOULD BE APPOINTED CLASS COUNSEL.

Plaintiffs respectfully request that their counsel be appointed class counsel in this matter. Rule 23(c)(1)(B) provides that “[a]n order that certifies a class action . . . must appoint class counsel under Rule 23(g).” The factors listed under Rule 23(g) all favor appointment of Taus, Cebulash & Landau, LLP; Berger & Montague, PC; Faruqi & Faruqi, LLP; Gustafson Gluek PLLC; and Stoll Stoll Berne Lokting & Schlacter P.C. as class counsel and Cole Schotz Meisel Forman & Leonard, P.A. as liaison class counsel. Counsel has worked extensively identifying and investigating the claims, reviewing millions of pages of documents, conducting numerous fact and expert witness depositions, responding to written discovery, and securing expert testimony. Counsel has substantial knowledge of and experience in litigating complex antitrust class actions. (See firm resumes, Weinstein Decl. Exs. C–H.) Counsel has expended and will continue to expend the necessary resources to represent the class. For these reasons, Plaintiffs’ counsel should be appointed class counsel.

CONCLUSION

For the foregoing reasons, Plaintiffs’ Motion for Class Certification respectfully should be granted.

Respectfully submitted,

By: /s/ Michael S. Weinstein
Michael S. Weinstein
**Cole Schotz Meisel Forman & Leonard,
P.A.**
Court Plaza North
25 Main Street
P.O. Box 800
Hackensack, NJ 07602-0800
mweinstein@coleschotz.com
(201) 525-6321

James V. Bashian, Esq.
**LAW OFFICES OF JAMES V.
BASHIAN, ESQ.**
70 Adams Street, 4th Floor
Hoboken, NJ 07030
(973) 227-6330
jbashian@bashianlaw.com

David M. Taus, Esq.
DEVERO TAUS, LLC
2011 Somerville Road, Suite B
Bedminster, NJ 07921
(908) 375-8142
dtaus@deverotaus.com

Paul O. Paradis, Esq.
Gina M. Tufaro, Esq.
HORWITZ, HORWITZ & PARADIS
570 Seventh Avenue, 20th Floor
New York, NY 10018
(212) 986-4500
pparadis@hhplawny.com
gtufaro@hhplawny.com

Jay P. Saltzman, Esq.
LAW OFFICES OF JAY P. SALTZMAN
110 Wall St., 11th Floor
New York, NY 10005
(212) 204-5676
jay@saltzmanlawny.com

Dated: January 9, 2015

Barry S. Taus, Esq.
Brett H. Cebulash, Esq.
Kevin S. Landau, Esq.
TAUS, CEBULASH & LANDAU, LLP
80 Maiden Lane, Suite 1204
New York, NY 10038
(212) 520-4310
btaus@tcllaw.com
bcebula@tcllaw.com
klandau@tcllaw.com

Keith Dubanevich, Esq.
Mark Friel, Esq.
**STOLL STOLL BERNE LOKTING &
SCHLACTER P.C.**
209 S.W. Oak Street, Fifth Floor
Portland, OR 97204
(503) 227-1600
kdubanevich@stollberne.com
mfriel@stollberne.com

Daniel C. Hedlund, Esq.
Michelle J. Looby, Esq.
GUSTAFSON GLUEK PLLC
Canadian Pacific Plaza
120 South Sixth Street, Suite 2600
Minneapolis, MN 55402
(612) 333-8844
dhedlund@gustafsongluek.com
mlooby@gustafsongluek.com

David F. Sorensen, Esq.
Nick Urban, Esq.
BERGER & MONTAGUE, PC
1622 Locust Street
Philadelphia, PA 19103
(215) 875-3000
dsorensen@bm.net
nurban@bm.net

Peter R. Kohn, Esq.
FARUQI & FARUQI, LLP
101 Greenwood Avenue, Suite 600
Jenkintown, PA 19046
(215) 277-5770
pkohn@faruqilaw.com

Attorneys for Plaintiffs

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
I.A.	<i>Qualifications</i>	1
I.B.	<i>The Proposed Class</i>	2
I.C.	<i>Assignment</i>	4
I.D.	<i>Summary of Conclusions</i>	4
II.	BACKGROUND AND THE ECONOMICS OF THE TYING CLAIM	6
II.A.	<i>General Background on Cable Services</i>	6
II.B.	<i>What is Tying?</i>	10
II.C.	<i>Tying Claim Requirement 1: Separate Tying and Tied Products</i>	26
II.D.	<i>Tying Claim Requirement 2: Condition or Coercion</i>	29
II.E.	<i>Tying Claim Requirement 3: Substantial Volume of Commerce</i>	30
III.	TYING CLAIM REQUIREMENT 4: MARKET POWER ANALYSIS	31
III.A.1.	<i>Tying-product market definition</i>	32
III.A.2.	<i>Tied-product market definition</i>	42
III.A.3.	<i>Geographic market definition: Cablevision service areas in New York, New Jersey, and Connecticut (Cablevision’s “Tri-State Footprint”)</i>	46
III.B.	<i>Market Structure Analysis: Indirect evidence of market power</i>	54
III.C.	<i>Market Power: Conclusion based on market structure analysis</i>	62
III.D.	<i>Direct Evidence of Market Power: Price discrimination</i>	63
III.E.	<i>Direct Evidence of Market Power: Strategic behavior</i>	70
IV.	AN ECONOMIC ANALYSIS OF ANTITRUST INJURY AND DAMAGES.....	71
IV.A.	<i>Antitrust Injury and Damages Analysis</i>	71
IV.B.	<i>Antitrust Injury and Damages Robustness Analysis 1</i>	77
IV.C.	<i>Retail margins as an additional robustness check on damage magnitude</i>	81
	APPENDIX I: RESUME OF JUSTINE S. HASTINGS.....	85
	APPENDIX II: DOCUMENTS CONSIDERED.....	94

APPENDIX III: COMPARISON OF STBs OFFERED FOR RENTAL BY CABLEVISION AND STBs FOR SALE IN CANADA 134

APPENDIX IV: MINIMUM AND MAXIMUM CABLEVISION MARKET SHARES AND HHI STATISTICS 151

APPENDIX V: CABLEVISION, VERIZON FiOS, AND AT&T U-VERSE FOOTPRINT: 2004-2013 156

I. INTRODUCTION

I.A. *Qualifications*

1. My name is Justine S. Hastings. I am an Associate Professor of Economics with Tenure at Brown University. Prior to my position at Brown, I was an Associate Professor at Yale University and an Assistant Professor at Dartmouth College. I earned a doctorate degree in Economics from the University of California at Berkeley in 2001, and earned a Master of Science in Agricultural and Resource Economics, as well as a Bachelor's Degree in Economics, during my four years as an undergraduate at the University of California at Davis. I am a Faculty Research Fellow at the National Bureau of Economic Research ("NBER"), affiliated with the NBER research programs in Industrial Organization, Public Economics, Environmental and Energy Economics, Education Economics, and Economics of Aging.

2. My research spans Industrial Organization (competition, marketing, and firm behavior) and Public Economics (regulation, consumer behavior, and policy design). In my research, I examine the interactions between consumer behavior and firm strategy to draw lessons for regulation and public policy. I have published papers in leading scholarly journals including the *Quarterly Journal of Economics*, the *American Economic Review*, the *American Economic Journal*, *Journal of Public Economics*, and the *International Journal of Industrial Organization*.

3. I currently serve on the Academic Research Council ("ARC") for the United States Federal Consumer Financial Protection Bureau ("CFPB"). The ARC members were selected for their research expertise in consumer personal finance markets, industry structure, and regulation to provide guidance and input on the design of CFPB regulations. I also serve on the Council of Economic Advisors for the Governor of Rhode Island. Council members' tasks

include advising the governor, the executive office of commerce, and the state on economic policy. I have provided expert testimony before the U.S. Senate, Committee on the Judiciary, Subcommittee on Antitrust, Competition, and Consumer Rights and before the California State Assembly, Select Committee on Gasoline Competition, Marketing, and Pricing. I have testified in New Hampshire State Court and the United States District Court for the Western District of Oklahoma. I have provided declarations in *In re Cox Enterprises, Inc. Set-Top Cable Television Box Antitrust Litig.*, 12-MDL-2048-C (W.D. Okla.) (class certified).

4. I am being compensated at the billing rate of \$675 per hour, and my compensation is not dependent on the outcome of this litigation. A copy of my curriculum vitae is attached to this report as Appendix I. My work on this matter is ongoing, and I reserve the right to supplement and modify my report as additional information and data become available.

I.B. *The Proposed Class*

5. Plaintiffs Gary Marchese, Esther Weinstein, and Joan Howard (“Plaintiffs”) allege in the operative complaint that Cablevision Systems Corporation and CSC Holdings, LLC (collectively “Cablevision”) employs an illegal tying arrangement in which it uses its market power to require its subscribers to rent set-top boxes (“STBs”) as a condition for accessing Cablevision’s Two Way Services. Two Way Services (“TWS”) include services available and accessible to a subscriber through a remote control via two-way, interactive communication with Cablevision. These services include (1) the interactive program guide (“IPG”); (2) the ability to order pay-per-view (“PPV”) events using a remote control; (3) Video on Demand (“VOD”); and (4) iO Games.

6. It is my understanding that the Court found in its Opinion dated January 9, 2012 that Plaintiffs allegations stated a claim under Sherman Act, 15 U.S.C. § 1, and stated that “[t]he

Court finds these alleged facts to be sufficient for establishing a ‘cluster’ product market of Two Way Services in that the combination of interactive services provided is a combination reflective of the commercial realities in the industry of MVPDs creating a distinct line of commerce, ...” and that “... differences exist between the Defendant’s provision of interactive services and non-cable and other entertainment providers that offer individual services or partial clusters that are not bundled together in a convenient, comprehensive format accessible through a remote from the interior of a home.”¹ It is a commercial reality that Cablevision offers digital video services, such as its iO Packages, that critically rely on TWS. These TWS are, in the Court’s language, the relevant “clustered product,” which as a commercial reality Cablevision’s customers subscribe to in effect exclusively through a digital video service iO Package and which are not available through the use of a substitute (such as a CableCARD),² that Cablevision ties to STBs to exercise market power in the STB market.

7. I understand the proposed class in this case is defined as: “All persons in the states of New Jersey, Connecticut and New York who subscribe to Two Way Services and pay a monthly rental fee to Cablevision for a cable set-top box during the period April 29, 2004 to the present (the ‘Class Period’).”³ Cablevision’s service areas in New Jersey, Connecticut, and New York will be referred to as Cablevision’s “Tri-State Footprint.”

¹ *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *2 (D.N.J. Jan. 9, 2012) (ECF No. 66).

² A CableCARD is “a PC card that, when used in conjunction with a Digital Cable Ready (DCR) CableCARD-compatible device, works in place of a digital cable box to decode Optimum’s digital programming.” See http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed June 9, 2014).

³ Fifth Amended Complaint, ¶ 138 (the “Class”). Excluded from the Class are Cablevision and its officers, directors, employees, affiliates and subsidiaries, and any Judges to whom this case is or may be assigned and any member of those Judges’ immediate families, those Judges’ law clerks and their immediate families, and any other judicial officers who are or may be assigned to this case and their immediate families. *Id.*

I.C. *Assignment*

8. I have been asked to determine whether economic issues associated with liability in this matter – relevant market definition, market power, coercion and harm to competition – will be capable of proof through evidence that is common to the Class as a whole, rather than individual to its members.

9. With respect to antitrust injury and damages, I have been asked to perform an economic analysis using a common methodology based on common evidence to determine if all or virtually all Class members paid supra-competitive rental rates for the tied product and, if so, whether such overcharge injury can be demonstrated through evidence and a methodology that are common to the Class rather than individual to its members. In the event that I find that Class members suffered such injury in the form of overcharges, I have been asked whether there is a method to reliably calculate overcharge damages on a classwide basis and, if so, to calculate such damages.

I.D. *Summary of Conclusions*

10. This section summarizes my primary findings and conclusions. Because the report contains a detailed analysis, the following summary does not reflect all of my conclusions or all of the bases for those conclusions. The facts or data upon which I am basing the opinions and inferences reflected in this report are of a type reasonably relied upon by experts in the field of economics. A list of the documents considered by me or staff operating under my direction in preparation of this report is contained in Appendix II. My primary conclusions are summarized as follows:

Cablevision's Market Power in the Tying Market

Market Definition

- Plaintiffs are capable of proving, based on common evidence, that the relevant tying product consists of TWS, which as a commercial reality customers purchase in effect only with a digital programming package in the market for digital video services. TWS give customers the capability of two-way communication features valued for allowing convenient entertainment enjoyment via remote within the home. TWS include IPG, VOD, the ability to order PPV events using a remote control, and iO Games, which are not available with a CableCARD. These TWS are interactive services that are a critical component of the digital video services to which consumers subscribe, and which Cablevision requires the rental of an STB to utilize.
- Plaintiffs are capable of proving, based on common evidence, that the relevant tied-product market is an STB required for TWS.
- Plaintiffs are capable of proving, based on common evidence, that the relevant geographic market for both the tying and tied products is Cablevision's Tri-State Footprint, that is the area in which it has franchise agreements to provide cable service within the states of Connecticut, New York, and New Jersey.

Market Power: Market Structure and Supporting Evidence

- [REDACTED]
- Plaintiffs are capable of proving, based on common evidence, that there are significant barriers to entry in the relevant tying market.
- Plaintiffs are capable of proving, based on common evidence, that Cablevision has market power in the tying market.

Antitrust Injury and Damages

- Plaintiffs are capable of proving, based on common evidence, that all or virtually all members of the proposed Class have suffered common antitrust injury by paying supra-competitive prices for STBs as a result of Defendant's tying conduct.
- Plaintiffs are capable of calculating, based on a common methodology and common evidence, the extent of the overcharges incurred by the Class in the aggregate.

11. My opinions and conclusions are based on discovery to date. I reserve the right to amend and supplement my opinions and conclusions as discovery continues and additional information becomes available.

II. BACKGROUND AND THE ECONOMICS OF THE TYING CLAIM

II.A. *General Background on Cable Services*

12. Service providers that offer video programming services comparable to those offered by a cable company are known as multichannel video programming distributors (“MVPDs”). MVPDs include cable operators (such as Cablevision or Comcast), direct broadcast satellite (“DBS”) service providers such as DirecTV and DISH Network (“DISH”), and television services offered by telephone companies (“Telcos”) such as AT&T U-verse and Verizon FiOS.⁴ The United States Federal Communications Commission (“FCC” or “Commission”) defines three types of multichannel video services: basic cable, expanded cable, and digital video.⁵ Cable companies typically offer all three types of service, as they are required to offer the lowest tier by regulators. However, other MVPDs typically offer only digital video (digital multichannel video services).

13. Cablevision is one of the largest providers of MVPD services in the United States.⁶ [REDACTED]

⁴ FCC, “Thirteenth Annual Report,” MB Docket No. 06-189 (adopted November 27, 2007), ¶ 3 and ¶ 5.

⁵ FCC, “Report on Cable Industry Prices,” MM Docket No. 92-266 (adopted February 14, 2011), Section III.A.

⁶ Based on ranking of MVPDs by total video service customers in 2012. See National Cable & Telecommunications Association, “Top 25 Multichannel Video Service Customers (2012),” available at <http://www.ncta.com/industry-data/item/217> (accessed June 24, 2013).

[REDACTED] Currently, Cablevision operates solely in its Tri-State Footprint.⁸

14. Cablevision offers the three tiers of cable service outlined above. Basic cable service is an entry-level basic service tier that all cable operators in the United States are required to offer.⁹ It includes broadcast television signals, public/educational/governmental channels, and a few other national, regional, or local video programming services.¹⁰ Cablevision's basic cable service is called Broadcast Basic and offers "a government mandated broadcast basic level of service which generally includes local over-the-air broadcast stations, such as network affiliates (e.g., ABC, NBC, CBS, FOX), and public, educational or governmental channels."¹¹

15. As a next level of service, cable operators typically offer what the FCC refers to as Expanded Cable Service, which usually consists of the basic service tier and several popular national cable networks such as Disney Channel, Nickelodeon, CNN, and ESPN.¹² Cablevision’s expanded cable service was called “Family Cable” until 2012. Family Cable included all Broadcast Basic channels and several popular national cable networks. Cablevision states:

All of our cable television systems also offer an expanded basic package of services, generally marketed as “Family Cable”, which includes, among other programming, news,

⁷ CVC-Marchese-03185989 at 990; CVC-Marchese-03186108 at 109; CVC-Marchese-03186171 at 172.

⁸ Until 2010, Cablevision operated solely in its Tri-State Footprint. In 2010, Cablevision purchased Bresnan Communications' cable operations in Montana, Wyoming, Colorado, and Utah and branded the service areas as "Optimum West." See <https://www.cablevision.com/pdf/news/121410.pdf> (December 14, 2010). See also Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2010), p. 1. In 2013, Cablevision sold Optimum West to Charter Communications. See <https://www.cablevision.com/pdf/news/070113.pdf> (July 1, 2013).

⁹ FCC, “Report on Cable Industry Prices,” MM Docket No. 92-266 (adopted June 7, 2013), footnote 3.

¹⁰ FCC, “Fourteenth Report,” MB Docket No. 07-269, (adopted July 18, 2012), ¶ 103; see also FCC, “Report on Cable Industry Prices,” MM Docket No. 92-266, (adopted February 14, 2011), footnote 4.

¹¹ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2011), p. 4.

¹² FCC, “Report on Cable Industry Prices,” MM Docket No. 92-266 (adopted February 14, 2011), Section III.A and footnote 17.

information, entertainment, and sports channels such as CNN, CNBC, Discovery, ESPN, AMC, the Disney Channel, and regional sports networks such as MSG Network.¹³

16. In 2012, Family Cable was discontinued and replaced with a service called the Optimum Value Package (“iO Value”).¹⁴ Currently, iO Value requires an STB or CableCARD rental from Cablevision, and falls under the next tier of service called digital video.

17. The next class of multichannel video service is referred to by the FCC as digital video.¹⁵ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]¹⁸

18. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Cable companies are required by regulators to offer digital video service through a CableCARD.²¹ This requirement was an attempt by regulators to create an untied, competitive, independent market for navigation devices

¹³ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2011), p. 4.

¹⁴ See Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2012), p. 4. See also CVC-Marchese-00060154 at 155 and CVC-Marchese-00061051 at 052.

¹⁵ FCC, “Report on Cable Industry Prices,” MM Docket No. 92-266 (adopted February 14, 2011), Section III.A.

¹⁶ CVC-Marchese-03618967 at 971; See also Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2001), p. 6.

¹⁷ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2003), pp. 7-8.

¹⁸ CVC-Marchese-00844289 at 289; Deposition of Kristin Dolan (April 8, 2014), 18:19-21:16.

¹⁹ CVC-Marchese-00319929 at 929; Deposition of Stephanie Reina (May 4, 2014), 162:15-21.

²⁰ CVC-Marchese-00104444 at 444; CVC-Marchese-00973657 at 698; Deposition of Kristin Dolan (April 8, 2014), 125:22–126:19. See also http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed on June 9, 2014).

²¹ National Broadband Plan, Broadband Competition and Innovation Policy, available at http://www.broadband.gov/plan/4-broadband-competition-and-innovation-policy/#_edn105.

(see Section II.B, beginning in paragraph 21). In reality that goal did not materialize as CableCARDS never ended up including TWS. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. Digital video without TWS does not appear to be a viable substitute for digital video with TWS, as we will discuss later.

19. DBS providers (DISH and DirecTV) and Telcos (Verizon's FiOS and AT&T's U-verse) provide similar digital video service to Cablevision. Both FiOS and U-verse offer TWS with digital programming packages which include the IPG, VOD, PPV using a remote, and video games.²² FiOS similarly offers digital services with a CableCARD for one-way service, per the aforementioned regulations imposed on it and other cable providers by the FCC.²³ However, U-verse, not subject to such regulations, offers only digital programming with TWS.²⁴ DISH and DirecTV offer programming packages which include a close alternative to two-way communication with the MVPD company. They offer an IPG (called IPG at DISH²⁵ and EPG [electronic program guide] at DirecTV²⁶), VOD, PPV using a remote, and video games.²⁷ While

²² FCC, "Fourteenth Report," MB Docket No. 07-269 (adopted July 18, 2012), ¶ 126 - ¶ 131.

²³ FCC, "Fourteenth Report," MB Docket No. 07-269 (adopted July 18, 2012), footnote 259. See also "Verizon Bites the CableCard Bullet," *Multichannel News* (May 15, 2008).

²⁴ See AT&T, "What is IPTV?", available at https://www.att.com/Common/about_us/files/pdf/IPTV_background.pdf. See also FCC, "Fifteenth Report," MB Docket No. 12-203 (adopted July 19, 2013), ¶ 28. See also National Broadband Plan, Broadband Competition and Innovation Policy, available at http://www.broadband.gov/plan/4-broadband-competition-and-innovation-policy/#_edn105.

²⁵ Echostar Communications Corporation, Annual Report (December 31, 2003), p. 10 and p. F-47. See also FCC, "Seventh Annual Report," CS Docket No.00-132 (adopted January 2, 2001), ¶ 207.

²⁶ DIRECTV Annual Report (2004), p. 7. See also FCC, "Ninth Annual Report," MB Docket No.02-145 (adopted December 23, 2002), ¶ 160.

²⁷ DIRECTV and DISH Network began providing interactive games in 2005. See DIRECTV Annual Report (2005). Echostar Communications Corporation, Annual Report (December 31, 2005), p. 4. See also MyDish: Games Channel 96 at <http://www.mydish.com/upgrades/products/games-channel-96/?WT.svl=upgrades-subnav> (accessed

DBS providers only communicate programming one-way from the satellite to the home, DBS subscribers access a suite of interactive content with an internet or phone connection, effectively providing them with a close substitute to Cablevision, FiOS, and U-verse two-way communication.²⁸ Industry documents show that the DBS providers consider their product a close substitute for cable digital packages with two-way features, and vice versa.²⁹ Thus DBS is considered a provider of digital programming subscriptions that compete with those of cable companies and Telcos. Note that of these four MVPDs, only Verizon FiOS files with the FCC as a cable operator and thus is the only one that offers one-way services (a CableCARD option) to comply with FCC regulations.³⁰

II.B. *What is Tying?*

20. Tying occurs when a firm sells one product (the tying product), but only on the condition that the purchaser also buys a second, separate and different product (the tied product) from it as well. Tying causes harm to competition when a firm with market power in the tying market uses that market power to coerce customers into buying a second product (the tied product) from them. Tying can then lessen competition in the tied market, thus lowering consumer welfare through higher prices for the tied product and/or reduced choice and quality.

on August 8, 2014). DIRECTV: Game Lounge at <http://www.directv.com/DTVAPP/global/secondaryIndex.jsp?assetId=3060010> (accessed on August 8, 2014).

²⁸ FCC, “Fourteenth Report,” MB Docket No. 07-269 (adopted July 18, 2012), ¶ 121. See also MyDish: Pay-Per-View at <http://www.mydish.com/support/use-ppv> (accessed August 7, 2014); DIRECTV: Help Center at https://support.directv.com/app/answers/detail/a_id/540/related/1/session/L2F2LzEvdGltZS8xNDA1NDU2NzUwL3NpZC81ckNzaW5abA%3D%3D (accessed August 7, 2014).

²⁹ For example, Michael Powell, President and CEO of the National Cable & Telecommunications Association (“NCTA”) says that one can subscribe to cable television and “get up to 150 HD channels, the latest premium content and live events, video on demand and the ability to record and watch at your convenience on a DVR” and that one “can get a very similar experience from Direct TV and Dish.” See Testimony of Michael K. Powell, President and CEO of NCTA, “The Future of Video”, United States House of Representatives (June 27, 2012), available at <https://www.ncta.com/news-and-events/media-room/article/2440>.

³⁰ FCC, “Fourteenth Report,” MB Docket No. 07-269 (adopted July 18, 2012), ¶ 32 and footnote 259. See also “Verizon Bites the CableCard Bullet,” *Multichannel News* (May 15, 2008).

21. As I discuss in this report, the tying of STBs by MVPDs frustrated Congress's intent and denied consumers the benefits of competition. With respect to multichannel video programming and STBs, the U.S. Congress in the Telecommunications Act of 1996 directed the FCC as follows:

The Commission shall, in consultation with appropriate industry standard-setting organizations, adopt regulations to assure the commercial availability, to consumers of multichannel video programming and other services offered over multichannel video programming systems, of converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.³¹

22. In response to this Congressional mandate, the FCC instituted a proceeding regarding the “commercial availability of navigation devices.”³² The FCC summarized its responsibility to carry out this mandate as follows:

This section requires the Commission to “assure” that “navigation devices” or customer premises equipment (“CPE”), used in conjunction with multichannel video programming distribution, are commercially available. Its purpose is to provide consumers with the benefits of competition in the manufacture and sale of such devices. These devices, such as cable television set-top boxes or direct broadcast satellite receivers, can be separated from the basic video distribution system but are necessary to the receipt, processing, or display of the underlying communications service involved. In the House Report, Congress noted that “competition in the manufacturing and distribution of consumer devices has always led to innovation, lower prices and higher quality. Clearly, consumers will benefit from having more choices among telecommunications subscription services arriving by various distribution sources.” Consequently, the overarching goal of this proceeding will be to assure competition in the availability of set-top boxes and other CPE.³³

³¹ Telecommunications Act of 1996, which added Section 629 to the Communications Act (February 8, 1996).

³² The FCC defines “navigation devices” as “converter boxes, interactive equipment, and other equipment used by consumers within their premises to receive multichannel video programming and other services offered over multichannel video programming systems.” See FCC, “Report and Order,” CS Docket No. 97-80 (adopted June 11, 1998), footnote 1.

³³ FCC, “Notice of Proposed Rule Making,” CS Docket No. 97-80 (adopted February 11, 1997), ¶ 3.

23. Tying one product to another requires market power in the tying-product market to effectively foreclose competition in the tied-product market. A firm is said to have market power if it can profitably raise and maintain price above the level that would prevail under competition.³⁴ Market power has also been described by the courts as the ability of a firm to control price.³⁵ A firm with market power sets prices for its product; it restricts output and raises price, realizing that when it charges some consumers more than a competitive price, it may lose marginal sales but the increased revenues from higher prices outweigh profit losses from lower sales. A firm with market power thinks strategically about an optimal price-quantity trade-off because it will not lose a large share of customers if it raises its price above competitive levels.

24. The firm may not lose a substantial fraction of customers despite raising prices if, for example, there are few other firms offering products that most consumers consider reasonable substitutes. Firms with market power are said to face a “downward-sloping” demand curve. The slope of a demand curve measures how much demand changes if price increases: a negative slope means that, if price rises, demand falls. A firm with market power sets its price above cost because it makes more in profits from the higher associated revenues than it loses in lost sales. A firm with market power is a “price maker,” significantly influencing market price and output with its strategic decisions.

25. In contrast, a competitive firm, one without market power, is a “price taker.” A competitive firm realizes that if it raises price above costs (including cost of time and labor, or

³⁴ The Organization of Economic Co-operation and Development definition, <http://stats.oecd.org/glossary/detail.asp?ID=3256> (accessed August 14, 2014). Market power also has been described as the “ability of a firm to raise prices above and/or reduce quality below competitive levels.” Rubinfeld, D. (1998), “Antitrust Enforcement in Dynamic Network Industries,” *Antitrust Bulletin*, pp. 859-882.

³⁵ ABA Section of Antitrust Law, *Antitrust Law Developments* (Seventh), Vol. 1, Chapter 2, footnote 3. “Monopoly power under Section 2 traditionally has been defined as ‘the power to control prices or exclude competition.’” See also footnote 5, “Courts sometimes use the phrase ‘market power’ as a synonym for monopoly power” and the two are used “interchangeably.”

“opportunity costs” of the business endeavor), it will lose sales as customers substitute to one of many other firms’ products quickly. Thus, any price increase will result in such a large decline in quantity demanded so as to cause lower profits. The competitive firm has to “take” the prevailing price in the market as the maximum price at which it can sell its product; the competitive firm is too small to influence market price, and must go with the market price set by many small firms competing intensely with each other for sales.

26. Furthermore, if there are few other firms supplying reasonable substitutes, firms with market power may realize the interrelatedness of their pricing strategies and respond to competitor price increases with further price increases.³⁶ For these reasons, when measuring market power, regulators look not only at market share of individual firms, but at indices of overall market concentration that take into account both the number of firms in a market and their market shares. For example, the U.S. Department of Justice (“DOJ”) and the Federal Trade

³⁶ Official Journal of the European Union, *Horizontal Merger Guidelines* (May 2, 2004), § 39: “A merger in a concentrated market may significantly impede effective competition, through the creation or the strengthening of a collective dominant position, because it increases the likelihood that firms are able to coordinate their behaviour in this way and raise prices, even without entering into an agreement within the meaning of Article 81.” U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (revised August 19, 2010), § 7: “A merger may diminish competition by enabling or encouraging post-merger coordinated interaction among firms in the relevant market that harms customers. Coordinated interaction involves conduct by multiple firms that is profitable for each of them only as a result of the accommodating reactions of the others. These reactions can blunt a firm’s incentive to offer customers better deals by undercutting the extent to which such a move would win business away from rivals. They also can enhance a firm’s incentive to raise prices, by assuaging the fear that such a move would lose customers to rivals. Coordinated interaction includes a range of conduct. Coordinated interaction can involve the explicit negotiation of a common understanding of how firms will compete or refrain from competing. Such conduct typically would itself violate the antitrust laws. Coordinated interaction also can involve a similar common understanding that is not explicitly negotiated but would be enforced by the detection and punishment of deviations that would undermine the coordinated interaction. Coordinated interaction alternatively can involve parallel accommodating conduct not pursuant to a prior understanding. Parallel accommodating conduct includes situations in which each rival’s response to competitive moves made by others is individually rational, and not motivated by retaliation or deterrence nor intended to sustain an agreed-upon market outcome, but nevertheless emboldens price increases and weakens competitive incentives to reduce prices or offer customers better terms. Coordinated interaction includes conduct not otherwise condemned by the antitrust laws. The ability of rival firms to engage in coordinated conduct depends on the strength and predictability of rivals’ responses to a price change or other competitive initiative. Under some circumstances, a merger can result in market concentration sufficient to strengthen such responses or enable multiple firms in the market to predict them more confidently, thereby affecting the competitive incentives of multiple firms in the market, not just the merged firm.”

Commission (“FTC”) use the Herfindahl-Hirschman Index (“HHI”) to measure market concentration. As stated by the DOJ, the HHI is:

[A] commonly accepted measure of market concentration. The HHI is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of four firms with shares of 30, 30, 20, and 20 percent, the HHI is 2,600 ($30^2 + 30^2 + 20^2 + 20^2 = 2,600$).

The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.

The agencies generally consider markets in which the HHI is between 1,500 and 2,500 points to be moderately concentrated, and consider markets in which the HHI is in excess of 2,500 points to be highly concentrated. Transactions that increase the HHI by more than 200 points in highly concentrated markets are presumed likely to enhance market power under the Horizontal Merger Guidelines issued by the Department of Justice and the Federal Trade Commission.³⁷

27. One reason the DOJ and FTC use the HHI to measure market power is that many economic models of competition indicate that as the number of firms decreases, all else equal, the ability of firms to profitably set supra-competitive prices increases.³⁸ The HHI statistic is relied on as a measure of concentration indicative of market power in the industry. Market concentration “affects the likelihood that one firm, or a small group of firms, could successfully exercise market power.”³⁹ As the key statistical measure of market concentration,⁴⁰ the HHI is an

³⁷ The United States Department of Justice, “Herfindahl-Hirschman Index,” available at <http://www.justice.gov/atr/public/guidelines/hhi.html> (accessed July 24, 2014).

³⁸ Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 283.

³⁹ *Federal Trade Commission v. Arch Coal, Inc., et al.*, 2004 U.S. Dist. LEXIS 15996, United States District Court for the District of Columbia (decided August 16, 2004).

⁴⁰ Rhoades, S. (1993), “The Herfindahl-Hirschman Index,” *Federal Reserve Bulletin*, Vol. 79, Issue 118, pp. 188-189 at 188.

important indicator of competition⁴¹ and monopoly power.⁴² The FTC and DOJ adopted the HHI as the preferred measure of market concentration in the 1992 *Horizontal Merger Guidelines*.⁴³ The DOJ states that the HHI is a “commonly accepted measure of market concentration,”⁴⁴ and the FTC states that “[t]he overall level of concentration in a market is measured by the Herfindahl-Hirschman Index (HHI).”⁴⁵

28. The FTC has stated that “courts and agencies most typically employ market share and HHI analysis” to determine “whether a firm (or group of firms) has the ability and incentive to raise or maintain prices above competitive levels (or achieve other anticompetitive effects).”⁴⁶ Moreover, the use of HHI is not limited to horizontal merger cases:⁴⁷

The Herfindahl index can be used to measure concentration in a variety of contexts. For example, it can be used to measure the concentration of income (or wealth) in U.S. households and also market concentration, that is, the degree of concentration of the output of firms in banking or industrial markets. It is useful in analyzing horizontal mergers because such mergers affect market concentration, and economic theory suggests that, other things equal, the concentration of firms in a market is an important element of market structure and a determinant of competition.⁴⁸

29. When a firm with market power over one product then ties an *additional* product to its sales of the first product, it can cause harm to consumers by decreasing competition in the

⁴¹ Rhoades, S. (1993), “The Herfindahl-Hirschman Index,” *Federal Reserve Bulletin*, Vol. 79, Issue 118, pp. 188-189 at 188.

⁴² *Prometheus Radio Project v. FCC*, 2004 U.S. App. LEXIS 12720, United States Court of Appeals for the Third Circuit (filed June 24, 2004).

⁴³ *FTC v. Cardinal Health, Inc. and Bergen Brunswig Corp.*, 1998 U.S. Dist. LEXIS 11778 (decided July 31, 1998).

⁴⁴ The United States Department of Justice, “Herfindahl-Hirschman Index,” available at <http://www.justice.gov/atr/public/guidelines/hhi.html> (accessed July 24, 2014).

⁴⁵ FTC, “Guide to Antitrust Laws, Mergers, Competitive Effects,” available at <http://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/mergers/competitive-effects> (accessed August 12, 2014).

⁴⁶ FTC, “How Do Courts and Agencies Evaluate Market Power?” available at <http://www.ftc.gov/opp/jointvent/classic3.shtm>.

⁴⁷ Rhoades, S. (1993), “The Herfindahl-Hirschman Index,” *Federal Reserve Bulletin*, Vol. 79, Issue 118, pp. 188-189 at 188.

⁴⁸ Rhoades, S. (1993), “The Herfindahl-Hirschman Index,” *Federal Reserve Bulletin*, Vol. 79, Issue 118, pp. 188-189 at 188.

tied market. Decreased competition in the tied market can result in higher prices and less innovation, both of which make consumers worse off, all else equal.

30. For example, consider the market for STBs. [REDACTED]

[REDACTED] By tying the rental of STBs to TWS, Cablevision customers are required to rent STBs from Cablevision in order to enjoy their digital services with two-way convenience via remote from their own homes. They, therefore, would not buy a STB from a third party vendor such as Best Buy or Amazon. This tie allows Cablevision to use its market power in the TWS market to create and exercise market power in the STB market. The result is a market for STBs with supra-competitive prices.

31. Figures 1 through 4 show the resulting prices in the tied-product market. They show the rental rates that Cablevision charges to its customers for STBs as well as Cablevision's wholesale acquisition costs for the rented STBs. The acquisition costs are on the left-hand panel of each set of graphs. [REDACTED]

[REDACTED]

⁴⁹ [REDACTED]. See Deposition of James Nuzzo (May 7, 2014), 204:10-14; CVC-Marchese-03504508 at 511; CVC-Marchese-03554587 at 588.

⁵⁰ In a competitive market, a firm's equilibrium price equals its marginal cost. See Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 58-59. Thus, if marginal cost decreases, the firm's price correspondingly decreases.

⁵¹ Generally, there are four main types of STBs: HD, HD DVR, SD, and SD DVR. HD is "high definition." SD is "standard definition." DVR is a "digital video recorder."







33. In Canada, cable companies do not tie TWS to the lease of an STB. As a result, customers can purchase TWS with their digital cable subscription from a cable company to enjoy interactive features with their programming content packages, and then purchase new STBs from a variety of retailers. Cable subscribers can also purchase used STBs from their cable company or on market platforms such as eBay. As a result, cable subscribers in Canada have a variety of options when choosing to purchase an STB for use with their TWS.

34. Figures 5 to 10 and Appendix III present a comparison of the prices and vintages of the STBs offered for rental by Cablevision and for sale in Canada. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

35. [REDACTED]

[REDACTED]

[REDACTED]

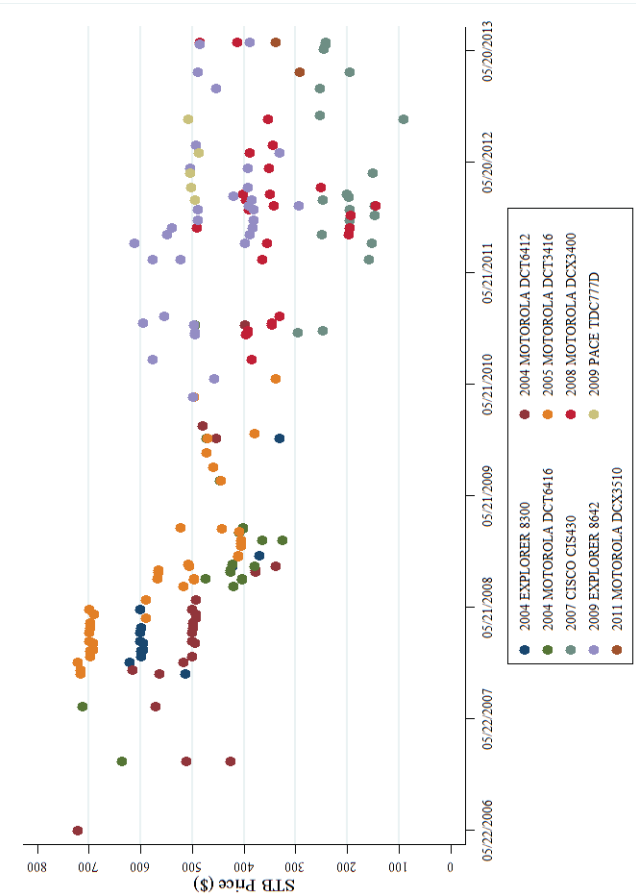
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

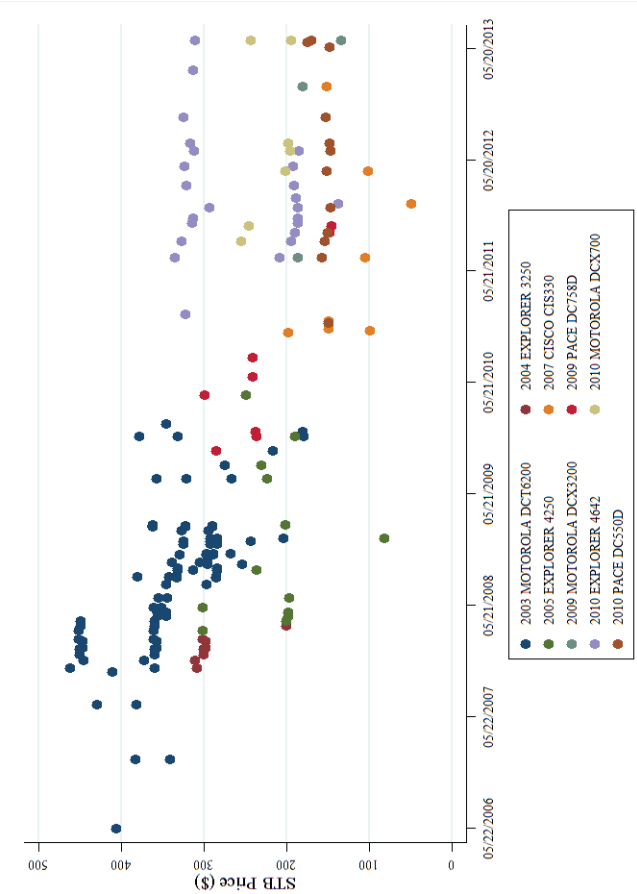
FIGURE 6
CANADIAN BEST BUY PRICES: HD DVR



Note: The year in the legend shows the year the model was released based on the model's user guide. For example, "2004 EXPLORER 8300" shows that the Explorer 8300 HD DVR was released in 2004.

Source: See Appendix II: Documents Considered, "Canadian Set-Top Box Prices"; Board of Governors of the Federal Reserve System, Canadian Dollars to One U.S. Dollar, Monthly.

FIGURE 8
CANADIAN BEST BUY PRICES: HD



Note: The year in the legend shows the year the model was released based on the model's user guide. For example, "2003 MOTOROLA DCT6200" shows that the Motorola DCT 6200 was released in 2003.

Source: See Appendix II: Documents Considered, "Canadian Set-Top Box Prices"; Board of Governors of the Federal Reserve System, Canadian Dollars to One U.S. Dollar, Monthly.

FIGURE 10
CANADIAN BEST BUY PRICES: SD



Note: The year in the legend shows the year the model was released based on the model's user guide. For example, "2001 EXPLORER 3200" shows that the Explorer 3200 was released in 2001.

Source: See Appendix II: Documents Considered, "Canadian Set-Top Box Prices"; Board of Governors of the Federal Reserve System, Canadian Dollars to One U.S. Dollar, Monthly.

36. To demonstrate the validity of a tying claim, four elements must be established using accepted economic methodologies.⁵³ First, two separate products or services must be involved in the tie. Second, the sale of one product or service (the “tying” product or service) must be conditioned upon the purchase of a second product or service (the “tied” product or service). Third, the tie must affect a substantial amount of interstate commerce in the tied-product market. Fourth, the seller must have market power in the tying market (to make possible the successful restraint of trade in the tied market).⁵⁴ As discussed in detail below, these elements can be established using common evidence and methodologies.

II.C. *Tying Claim Requirement 1: Separate Tying and Tied Products*

37. To offer TWS, STBs receive programming from a cable provider and communicate with the cable provider, allowing the customer to enjoy several interactive features via remote in the comfort of their home. TWS are interactive services including IPG, VOD, PPV using a remote, and video games, which are not available with a CableCARD during the Class Period. [REDACTED] Though STBs and TWS are used together, they constitute two separate products, i.e., consumers would purchase the two items separately in the absence of the tie. The following common facts demonstrate that they are indeed separate products.

38. [REDACTED]

[REDACTED]

⁵³ ABA Section of Antitrust Law (2012), *Annual Review of Antitrust Law Developments*, pp.30-32.

⁵⁴ “In order to make out a § 1 per se tying claim, a plaintiff must appropriately allege facts indicating: (1) a defendant seller tied two distinct products, conditioning sale of one product on the purchase of a different tied product; (2) the seller possesses market power in the tying product market; and (3) a substantial amount of interstate commerce is affected.” *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *2 (D.N.J. Jan. 9, 2012) (ECF No. 66).

⁵⁵ CVC-Marchese-03433226. See also Deposition of Kristin Dolan (April 8, 2014), 18:19–21:16.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

39. [REDACTED]

[REDACTED]

40. [REDACTED]

[REDACTED]

⁵⁶ CVC-Marchese-03460503 at 503; CVC-Marchese-01813763; CVC-Marchese-00058882 at 885; CVC-Marchese-00058287; CVC-Marchese-00060128 at 128.

⁵⁷ CVC-Marchese-03460503; CVC-Marchese-00747476.

⁵⁸ See, e.g., CVC-Marchese-00805554; CVC-Marchese-00747476; CVC-Marchese-00776560.

⁵⁹ See Cablevision Database: CUSTLEDGER, NFOV_CUSTRATES_HISTORY, and NFOV_CUSTRATES_DETAIL. See also CVC-Marchese-00058037; CVC-Marchese-00058233; CVC-Marchese-00058287; CVC-Marchese-00058299; CVC-Marchese-00058427; CVC-Marchese-00058429; CVC-Marchese-00058878; CVC-Marchese-00058882; CVC-Marchese-00058898; CVC-Marchese-00058914; CVC-Marchese-00058938; CVC-Marchese-00058990; CVC-Marchese-00059014; CVC-Marchese-00059896; CVC-Marchese-00059952; CVC-Marchese-00060002; CVC-Marchese-00060014; CVC-Marchese-00060038; CVC-Marchese-00060074; CVC-Marchese-00060080; CVC-Marchese-00060108; CVC-Marchese-00060112; CVC-Marchese-00060114; CVC-Marchese-00060128; CVC-Marchese-00060154; CVC-Marchese-00060162; CVC-Marchese-00060164; CVC-Marchese-00060616; CVC-Marchese-00060634; CVC-Marchese-00060642; CVC-Marchese-00060654; CVC-Marchese-00060668; CVC-Marchese-00060722; CVC-Marchese-00060926; CVC-Marchese-00061017; CVC-Marchese-00061051; CVC-Marchese-00061061; CVC-Marchese-00061067; CVC-Marchese-00061069; CVC-Marchese-00061071; CVC-Marchese-00061093; CVC-Marchese-00061111; CVC-Marchese-00061169; CVC-Marchese-00226419; CVC-Marchese-00226427; CVC-Marchese-00226440; CVC-Marchese-00226444; CVC-Marchese-00226452; CVC-Marchese-00254890; CVC-Marchese-00304632; CVC-Marchese-00304672; CVC-Marchese-00304674; CVC-Marchese-00307442; CVC-Marchese-00307506; CVC-Marchese-00307514; CVC-Marchese-00307598; CVC-Marchese-00307600; CVC-Marchese-00307607; CVC-Marchese-00307616; CVC-Marchese-00343412; CVC-Marchese-00343416; CVC-Marchese-00343442; CVC-Marchese-00344067; CVC-Marchese-00344079; CVC-Marchese-00344119; CVC-Marchese-01883806.

⁶¹ Best Buy, available at:

Rogers, available at:

Shaw, available at:

Videotron, available at:

28

42. Fifth, the actions of the FCC and Congress with respect to encouraging competition in navigation devices for multichannel video programming services assume that STBs are a separate product from such video services, and that rival firms should compete to produce innovative STBs sold at retail.⁶²

43. These facts are common to the class and establish that Plaintiffs are capable of proving, through common evidence, that the tying and tied products are separate products.

II.D. *Tying Claim Requirement 2: Condition or Coercion*

44. Common evidence can be used to establish that renting an STB from Cablevision is indeed a condition to receiving TWS from Cablevision.

45. [REDACTED]

[REDACTED]

[REDACTED].⁶⁴

46. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁶² FCC, “Notice of Inquiry,” MB Docket No. 10-91 (CS Docket No. 97-80) PP Docket No. 00-67, FCC 10-60 (adopted April 21, 2010), ¶ 4.

⁶³ CVC-Marchese-03255611 at 611; CVC-Marchese-00319929 at 929; Deposition of Stephanie Reina (May 2, 2014), 162:15–21; Fifth Amended Complaint, ¶ 41. See http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed on June 9, 2014).

⁶⁴ CVC-Marchese-00104444 at 444; CVC-Marchese-00973657 at 698; Deposition of Kristin Dolan (April 8, 2014), 125:22–126:19. See also http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed on June 9, 2014).

⁶⁵ CVC-Marchese-00319929.

[REDACTED]

[REDACTED]⁶⁶

47. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

48. For these reasons, I conclude that common evidence can be used to establish that Cablevision conditions the purchase of its TWS on the rental of its STBs.

II.E. *Tying Claim Requirement 3: Substantial Volume of Commerce*

49. [REDACTED]

[REDACTED]

⁶⁶ CVC-Marchese-03569001 at 001.

⁶⁷ See CVC-Marchese-00319929. See also http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed on June 9, 2014) and Deposition of Stephanie Reina (May 2, 2014), 160:11-16.

⁶⁸ See CVC-Marchese-00059952-53 [REDACTED]

[REDACTED]

⁶⁹ [REDACTED]

See Cablevision Database: NFOV_CUSTRATES_HISTORY, NFOV_CUSTRATES_DETAIL; CVC-Marchese-00403729.xls; CVC-Marchese-00403730.xls; CVC-Marchese-00058037; CVC-Marchese-00058233; CVC-Marchese-00058287; CVC-Marchese-00058299; CVC-Marchese-00058427; CVC-Marchese-00058429; CVC-Marchese-00058878; CVC-Marchese-00058882; CVC-Marchese-00058898; CVC-Marchese-00058914; CVC-Marchese-00058938; CVC-Marchese-00058990; CVC-Marchese-00059014; CVC-Marchese-00059896; CVC-Marchese-00059952; CVC-Marchese-00060002; CVC-Marchese-00060014; CVC-Marchese-00060038; CVC-Marchese-00060074; CVC-Marchese-00060080; CVC-Marchese-00060108; CVC-Marchese-00060112; CVC-Marchese-00060114; CVC-Marchese-00060128; CVC-Marchese-00060154; CVC-Marchese-00060162; CVC-Marchese-00060164; CVC-Marchese-00060166; CVC-Marchese-00060634; CVC-Marchese-00060642; CVC-Marchese-00060654; CVC-Marchese-00060668; CVC-Marchese-00060722; CVC-Marchese-00060926; CVC-Marchese-00061017; CVC-Marchese-00061051; CVC-Marchese-00061061; CVC-Marchese-00061067; CVC-Marchese-00061069; CVC-Marchese-00061071; CVC-Marchese-00061093; CVC-Marchese-00061111; CVC-Marchese-00061169; CVC-Marchese-00226419; CVC-Marchese-00226427; CVC-Marchese-00226440; CVC-

50. For these reasons, I conclude that Plaintiffs are capable of proving, through common evidence, that Cablevision conducted a substantial volume of interstate commerce in the tied, STB market.

III. TYING CLAIM REQUIREMENT 4: MARKET POWER ANALYSIS

51. To measure a firm's market power, economists use two complementary approaches. First, a market-structure analysis provides an indirect method for measuring market power.⁷¹ A market-structure analysis involves defining a relevant market, assigning market shares, calculating market concentration, and characterizing barriers to entry.

52. Using this approach, which is based on common evidence, I demonstrate that Plaintiffs are capable of proving that Cablevision has sufficient market power in the relevant tying market to enable it to restrain trade in the relevant tied market.

53. Second, a market-performance analysis provides direct evidence of market power,⁷² complementing evidence of market power from a market-structure analysis.⁷³ When

Marchese-00226444; CVC-Marchese-00226452; CVC-Marchese-00254890; CVC-Marchese-00304632; CVC-Marchese-00304672; CVC-Marchese-00304674; CVC-Marchese-00307442; CVC-Marchese-00307506; CVC-Marchese-00307514; CVC-Marchese-00307598; CVC-Marchese-00307600; CVC-Marchese-00307607; CVC-Marchese-00307616; CVC-Marchese-00343412; CVC-Marchese-00343416; CVC-Marchese-00343442; CVC-Marchese-00344067; CVC-Marchese-00344079; CVC-Marchese-00344119; CVC-Marchese-01883806; Letter from William J. Dunn to Kevin Landau, *Re: Marchese et al. v Cablevision Systems Corporation et al.*, No. 10-cv-2190 (KM) (MAH) (D.N.J.), February 11, 2013, pp. 7-8.

⁷⁰ ABA Section of Antitrust Law (2012), *Antitrust Law Developments* (Seventh), Vol. 1, p. 198, citing *United States v. Lowe's, Inc.* 371 U.S. 38 (1962).

⁷¹ See, e.g., Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, Chapter 12.

⁷² See, e.g., Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, Chapter 12. See also Hausman, Jerry A. and J. Gregory Sidak (2007), "Evaluating Market Power Using Competitive Benchmark Prices Rather than the Hirschman-Herfindahl Index," *Antitrust Law Journal*, vol. 74, pp. 387-407.

looking at direct, common evidence from Cablevision's own documents, I find supporting evidence for the market-structure analysis conclusion that Cablevision has market power in the relevant tying market.

III.A.1. *Tying-product market definition*

54. Before assessing if a firm can exercise market power, a market must be defined in a geographic and product space. In other words, a market definition specifies a product and an associated geographical area in which a hypothetical monopolist could profitably exercise market power. A relevant product market has been described as consisting of products or services that are reasonably interchangeable.⁷⁴ Which products are reasonably interchangeable can be determined by examining such "practical indicia as industry or public recognition of the [market] as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors."⁷⁵ The common economic evidence indicates that the product market

⁷³ See, e.g., Edlin, Aaron S. and Daniel L. Rubinfeld (2004), "Exclusion or Efficient Pricing? The 'Big Deal' Bundling of Academic Journals," *Antitrust Law Journal*, vol. 72, pp. 119-157. ("Market definition is only a traditional means to the end of determining whether power over price exists. Power over price is what matters. As is stated in the Areeda, Elhauge, and Hovenkamp treatise, cases such as Microsoft, and the Areeda, Kaplow, and Edlin casebook, if power can be shown directly, there is no need for market definition: the value of market definition is in cases where power cannot be shown directly and must be inferred from sufficiently high market share in a relevant market.") Id., p. 141; Gregory J. Werden, a senior economist in the Antitrust Division of the U.S. Department of Justice makes a similar argument: "The Guidelines' hypothetical monopolist paradigm poses a thought experiment, but the relevant natural experiment may have been performed in a monopolization case. It may be possible to measure a defendant's market power directly, by observing the extent to which price was raised after rivals were excluded. If the natural experiment has been performed, one can measure directly the extent of a defendant's market power, and there may be nothing gained by delineating the relevant market in which that power is held. The best reason for proceeding with market delineation may be to double check the market power conclusions reached through other means. That may be useful in some cases, but if the market is delineated based on the direct evidence of market power, then market delineation is not an independent analytical path and therefore adds very little." Werden, Gregory J. (2000), "Market Delineation under the Merger Guidelines: Monopoly Cases and Alternative Approaches," *Review of Industrial Organization*, vol. 16, pp. 211-218, p. 213.

⁷⁴ *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962).

⁷⁵ *Brown Shoe Co. v. United States*, 370 U.S. 294, (1962), 325.

consists of TWS, as previously defined, which as a commercial reality are purchased with a subscription to a digital video service.

55. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

57. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

58. [REDACTED]

[REDACTED]

⁷⁶ CVC-Marchese-00104444 at 444; CVC-Marchese-00973657 at 698; Deposition of Kristin Dolan (April 8, 2014), 125:22–126:19. See also http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed on June 9, 2014).

⁷⁷ CVC-Marchese-03618967 at 71.

⁷⁸ CVC-Marchese-03433226.

⁷⁹ CVC-Marchese-03433226.

⁸⁰ Deposition of Kristin Dolan (April 8, 2014), 13:18-23. See also http://www.cablevision.com/about/leadership/kristin_dolan.jsp (accessed August 13, 2014).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

59. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁸¹ Deposition of Kristin Dolan (April 8, 2014), 15:12-15.

⁸² Deposition of Kristin Dolan (April 8, 2014), 18:19-21:16.

⁸³ Deposition of Kristin Dolan (April 8, 2014), 22:11-23:4.

⁸⁴ See, e.g., Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2002), p. 6; Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2004), p. 3.

⁸⁵ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2003), pp. 7-8.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

models of product choice (demand) imply that demand is determined by the relative value placed on the product less their relative costs.⁸⁸ Thus, cross price elasticity depends on the relative valuation placed on two products—the farther apart those values are, the less the products are substitutes.⁸⁹ Under standard assumptions, if two products prices are constant, but demand for one of the products increases substantially, it must be because the value consumers place on that product has increased, making the two products less substitutable. This empirical fact uses common evidence and clearly demonstrates that Cablevision subscribers in Cablevision's Tri-State Footprint do not view TWS as reasonably interchangeable with one-way service.

⁸⁷Train, K., *Discrete Choice Methods with Simulation*, Cambridge University Press, 2nd ed. 2009.

⁸⁸ See McFadden, D. (1972), “Conditional Logit Analysis of Qualitative Choice Behavior,” *Institute of Urban and Regional Development*, Issue 199, Working Paper; See also Train, K. (2009), *Discrete Choice Methods with Simulation*, New York, NY: Cambridge University Press, 2nd edition.

⁸⁹ Werden, G. (1998), "Demand Elasticities in Antitrust Analysis," *Antitrust Law Journal*, Vol. 66, Issue 2, pp. 363-414 at 402-406.



60. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁹⁰ A CableCARD-only customer is a digital customer who (1) rents at least one CableCARD in the household and (2) does not rent a STB in the household.

⁹¹ See FCC, “Comments of Verizon,” MB Docket No. 14-16 (March 21, 2014), p. 13.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁹² CVC-Marchese-00058037; CVC-Marchese-00058233; CVC-Marchese-00058287; CVC-Marchese-00058299; CVC-Marchese-00058427; CVC-Marchese-00058429; CVC-Marchese-00058878; CVC-Marchese-00058882; CVC-Marchese-00058898; CVC-Marchese-00058914; CVC-Marchese-00058938; CVC-Marchese-00058990; CVC-Marchese-00059014; CVC-Marchese-00059896; CVC-Marchese-00059952; CVC-Marchese-00060002; CVC-Marchese-00060014; CVC-Marchese-00060038; CVC-Marchese-00060074; CVC-Marchese-00060080; CVC-Marchese-00060108; CVC-Marchese-00060112; CVC-Marchese-00060114; CVC-Marchese-00060128; CVC-Marchese-00060154; CVC-Marchese-00060162; CVC-Marchese-00060164; CVC-Marchese-00060616; CVC-Marchese-00060634; CVC-Marchese-00060642; CVC-Marchese-00060654; CVC-Marchese-00060668; CVC-Marchese-00060722; CVC-Marchese-00060926; CVC-Marchese-00061017; CVC-Marchese-00061051; CVC-Marchese-00061061; CVC-Marchese-00061067; CVC-Marchese-00061069; CVC-Marchese-00061071; CVC-Marchese-00061093; CVC-Marchese-00061111; CVC-Marchese-00061169; CVC-Marchese-00226419; CVC-Marchese-00226427; CVC-Marchese-00226440; CVC-Marchese-00226444; CVC-Marchese-00226452; CVC-Marchese-00254890; CVC-Marchese-00304632; CVC-Marchese-00304672; CVC-Marchese-00304674; CVC-Marchese-00307442; CVC-Marchese-00307506; CVC-Marchese-00307514; CVC-Marchese-00307598; CVC-Marchese-00307600; CVC-Marchese-00307607; CVC-Marchese-00307616; CVC-Marchese-00343412; CVC-Marchese-00343416; CVC-Marchese-00343442; CVC-Marchese-00344067; CVC-Marchese-00344079; CVC-Marchese-00344119; CVC-Marchese-01883806.

61. Third, common evidence shows that Cablevision's competitors treat basic and digital video as separate products and the majority provides only packages with two-way communication features to their subscribers.

62. FiOS, U-verse, DISH Network, and DirecTV are the firms Cablevision documents refer to as Cablevision's competitors. Of the two Telcos, only Verizon FiOS offered one-way services through its analog service, but discontinued analog service in 2008.⁹³ However, FiOS began offering the CableCARD (one-way service) option in 2008.⁹⁴ DBS providers and U-verse do not offer a CableCARD option because they are not required to file with the FCC as a cable operator and thus are not subject to the FCC's CableCARD, one-way-service product offering requirements.⁹⁵ Moreover, AT&T U-verse has never offered one-way service in Cablevision's Tri-State Footprint. It offers only all-digital, TWS packages.⁹⁶ Similarly, neither of the two DBS providers, DISH Network and DirecTV, offer analog or CableCARD one-way service. They offer direct broadcast of programming from satellite with interactive features through an internet connection which are close substitutes to TWS available in iO packages.⁹⁷

63. These firms represent the firms that Cablevision considers its competitors [REDACTED]

[REDACTED]

⁹³ FCC, "Fourteenth Report," MB Docket No. 07-269 (adopted July 18, 2012), footnote 259.

⁹⁴ "Verizon Bites the CableCard Bullet," *Multichannel News* (May 15, 2008).

⁹⁵ National Broadband Plan, Broadband Competition and Innovation Policy, available at http://www.broadband.gov/plan/4-broadband-competition-and-innovation-policy/#_edn105 (accessed July 29, 2014).

⁹⁶ FCC, "Fourteenth Report," MB Docket No. 07-269 (adopted July 18, 2012), ¶ 129. See also IPTV Background at http://www.att.com/Common/about_us/files/pdf/IPTV_background.pdf (accessed on July 29, 2014).

⁹⁷ FCC, "Fifteenth Report," MB Docket No. 12-203 (adopted July 19, 2013), ¶ 112 and ¶ 117.

98

64. For example, Cablevision concludes in its 2013 Annual Report that it “faces intense competition in the New York metropolitan service area” from AT&T and Verizon and that “Verizon and AT&T have made and may continue to make promotional offers to customers in our New York metropolitan service area at prices lower than ours.”⁹⁹ Cablevision adds that “competition with Verizon and AT&T negatively impacts our video revenue in these areas and will continue to do so in the future.”¹⁰⁰

65. Cablevision views DISH Network and DirecTV as competitors.¹⁰¹ DISH Network and DirecTV are available to “the vast majority” of Cablevision’s customers in the Tri-State Footprint.¹⁰² DBS providers offer digital video service.¹⁰³ From 2003 to 2008, Cablevision regularly stated that DBS service providers were “a primary competitor” to Cablevision’s cable television services.¹⁰⁴

66. Furthermore, there is evidence common to the class indicating that online video distributors (“OVDs”) should not be included within the relevant tying-product market definition. [REDACTED]

⁹⁸ See CVC-Marchese-00424474; CVC-Marchese-00472290; CVC-Marchese-00581115; CVC-Marchese-00581645; CVC-Marchese-00582113; CVC-Marchese-00609896; CVC-Marchese-01009680; and CVC-Marchese-03504882. See also CVC-Marchese-01071711; CVC-Marchese-01009680; Deposition of Matthew Weiss (November 6, 2013), 212:13 – 213:21.

⁹⁹ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2013), pp. 9-10.

¹⁰⁰ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2013), p. 9.

¹⁰¹ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2013) pp. 9-10. See also, CVC-Marchese-01220213; CVC-Marchese-00582113; CVC-Marchese-01071711; CVC-Marchese-01009680.

¹⁰² See Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-Ks for the fiscal years ending December 31, 2003 to December 31, 2013.

¹⁰³ FCC, “Fourteenth Report,” MB Docket No. 07-269 (adopted July 18, 2012), ¶ 90.

¹⁰⁴ See Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-Ks for the fiscal years ending December 31, 2003 to December 31, 2008.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

67. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

68. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁰⁵ CVC-Marchese-00468640. Cord cutting is when consumers drop their “MVPD video services in favor of video services delivered over the Internet,” such as Netflix. See FCC, “Fourteenth Report,” MB Docket No. 07-269 (adopted July 18, 2012), ¶ 140.

¹⁰⁶ Deposition of Kristin Dolan (April 8, 2014), 112:24-115:17.

¹⁰⁷ <http://www.bloomberg.com/news/2011-12-15/cablevision-s-rutledge-to-resign-after-reshaping-company-1-.html> (accessed August 11, 2014).

¹⁰⁸ CVC-Marchese-01781739 at 740.

¹⁰⁹ Deposition of Kristin Dolan (April 8, 2014), 115:18-117:4 and 122:10-123:25.

69. [REDACTED]

[REDACTED]

[REDACTED]

70. Finally, regulators do not consider OVDs as competitors to digital video from MVPDs. Though the FCC previously stated that OVDs could potentially be a substitute product,¹¹³ current research has shown that OVDs are complements, not substitutes, for MVPD services. SNL Kagan stated that “online video is no longer considered a fundamental threat to the MVPD business model.”¹¹⁴ The U.S. Government Accountability Office found that “most of the industry representatives and experts with whom we spoke stated that, at this time, OVD services are generally seen as a complement to MVPD services, rather than a substitute.”¹¹⁵ In 2013, the FCC stated that “the concerns of MVPD executives regarding the threat of online video to traditional MVPD business models have diminished.”¹¹⁶ Comcast, Netflix, and Google consider

¹¹⁰ CVC-Marchese-01137824 at 849.

¹¹¹ CVC-Marchese-00424474; CVC-Marchese-00472290; CVC-Marchese-00581115; CVC-Marchese-00581645; CVC-Marchese-00582113; CVC-Marchese-00609896; CVC-Marchese-01009680; CVC-Marchese-03504882.

¹¹² [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹¹³ FCC, “Fifteenth Report,” MB Docket No. 12-203 (adopted July 19, 2013), ¶ 222.

¹¹⁴ FCC, “Fifteenth Report,” MB Docket No. 12-203 (adopted July 19, 2013), ¶ 132.

¹¹⁵ GAO, “Video Marketplace: Competition is Evolving, and Government Reporting Should be Reevaluated,” (June 2013), p. 15.

¹¹⁶ FCC, “Fifteenth Report,” MB Docket No. 12-203 (adopted July 19, 2013), ¶ 132.

OVDs to be complements, rather than substitutes, to traditional MVPD services.¹¹⁷ Netflix, the largest online video subscription service,¹¹⁸ stated:

Simply put, the data show that Netflix is a *supplemental* channel to MVPD. While Netflix is likely to show huge growth again this year, we think MVPD cord cutting will be minimal to nonexistent. We hear some stories from customers who have Netflix and no MVPD service, but these are generally people who rely on free broadcast TV (which is now in HD) and *supplement* with Netflix, rather than switching from MVPD to online.¹¹⁹

71. Thus, the industry findings show that OVDs are primarily a complement to, rather than a substitute for, traditional MVPD services. This evidence shows that Plaintiffs are capable of proving that OVDs are not substitutes for Cablevision's TWS, and are therefore not in the same product market.

III.A.2. *Tied-product market definition*

72. [REDACTED]

[REDACTED] STBs are differentiated products.¹²¹ Generally, there are four main types of STBs: HD, HD DVR, SD, and SD DVR. DVR service is a feature that differentiates a DVR STB (i.e., HD DVR and SD DVR) from other types of STBs (i.e., HD and SD).

¹¹⁷ Verizon and Writers Guild of America, West ("WGAW") believe that "OVDs are emerging as an alternative to traditional MVPD service, including Verizon's FiOS service." However, Verizon and WGAW do not claim that there is a substantial degree of substitutability between OVDs and MVPD service today. See FCC, "Fifteenth Report," MB Docket No. 12-203 (adopted July 19, 2013), ¶ 222.

¹¹⁸ FCC, "Fifteenth Report," MB Docket No. 12-203 (adopted July 19, 2013), ¶ 132.

¹¹⁹ Trefis Team, "Netflix Not Getting Big Boost from Cord-Cutting," *Forbes* (April 29, 2011), emphasis added.

¹²⁰ See CVC-Marchese-00609565 at 568; CVC-Marchese-03255611 at 611; CVC-Marchese-00319929 at 929; Deposition of Stephanie Reina (May 2, 2014), 162:15–21; CVC-Marchese-03536293 at 300; Deposition of James Nuzzo (May 7, 2014), 62:5-8.

¹²¹ Differentiated products are "products or brands of various firms" that consumers consider as "imperfect substitutes." They are "related products that do not have identical characteristics so that consumers do not view them as perfect substitutes." See Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 200 and p. 784.

73. Cablevision first launched its DVR service in November 2004.¹²² DVR service allows a customer to “record, pause and rewind live TV.”¹²³ A customer who rents a DVR STB without paying the fee for DVR service (“DVR service fee”) will not be able to utilize the DVR features of the DVR STB. A Cablevision customer must pay the DVR service fee in addition to the DVR STB rental fee to utilize the DVR features of a DVR STB. The DVR service fee is not independent of a DVR STB. Therefore, the true cost to DVR STB customers is the sum of the DVR STB rental fee and the DVR service fee.

74. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

75. [REDACTED]

[REDACTED]

[REDACTED]

¹²² “Cablevision Prepares DVR Rollout,” *Multichannel News* (November 9, 2004).

¹²³ CVC-Marchese-00058898 at 900.

¹²⁴ CVC-Marchese-00127285 at 287.

¹²⁵ CVC-Marchese-01054849 at 854.

¹²⁶ CVC-Marchese-01054849 at 852.

¹²⁷ CVC-Marchese-01054849 at 854.

¹²⁸ CVC-Marchese-01054849 at 852.

[REDACTED]

76. There are no reasonable substitutes for the STBs that are required in order for subscribers to access digital video services with TWS. One theoretical alternative for an STB is a CableCARD. However, as discussed above, Cablevision subscribers cannot access Cablevision's TWS (IPG, VOD, PPV using a remote, and iO Games) with only a CableCARD.¹³⁰

77. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

78. The FCC has identified several additional reasons that explain why CableCARDS are not reasonably interchangeable with STBs: "Unfortunately, in practice, cable customers who purchase retail navigation devices and connect these devices to their cable service using CableCARDS for conditional access typically experience additional installation and support costs and pay higher prices than those who lease set-top boxes from their cable company."¹³⁴ Regarding the commercial failure of CableCARDS, the FCC concluded: "[M]any retail device manufacturers abandoned CableCARDS as a solution to develop a retail market before any

¹²⁹ CVC-Marchese-00060642.

¹³⁰ http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed on June 9, 2014).

¹³¹ Deposition of Kristin Dolan (April 8, 2014), 125:22-126:19.

¹³² CVC-Marchese-00825513.

¹³³ CVC-Marchese-00844289 at 289.

¹³⁴ FCC, "Fourth Further Notice of Proposed Rulemaking", CS Docket 97-80 (PP Docket 00-67), FCC 10-61, (adopted April 21, 2010), ¶ 3 (footnotes omitted).

substantial benefits of the integration ban could be realized.”¹³⁵ The integration ban, which went into effect in July 2007, was designed to promote a competitive market for STBs as it required cable operators to “separate security in their leased devices and rely on the same conditional access mechanism that consumer electronics manufacturers use.”¹³⁶ However, FCC Commissioner Michael J. Copps summarized that “thus far, the CableCARD endeavor has produced more consumer frustration—not to mention agency travail—than it has competition.”¹³⁷

79. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

80. In sum, there is substantial economic evidence from which Plaintiffs are capable of proving that Cablevision’s STBs constitute an appropriate tied-product market in this case. This conclusion is based on common evidence.

¹³⁵ FCC, “Fourth Further Notice of Proposed Rulemaking”, CS Docket 97-80 (PP Docket 00-67), FCC 10-61, (adopted April 21, 2010), ¶ 8.

¹³⁶ FCC, “Thirteenth Annual Report”, MB Docket No. 06-189 (adopted November 27, 2007), ¶ 265.

See also FCC, “Third Report and Order and Order on Reconsideration”, In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, *Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronic Equipment*, CS Docket 97-80 (PP Docket 00-67), FCC 10-181 (adopted October 14, 2010), ¶ 3 and ¶ 45.

¹³⁷ Copps, Michael J., *Statement, re Video Device Competition*, MB Docket No. 10-91.

¹³⁸ [REDACTED]

III.A.3. *Geographic market definition: Cablevision service areas in New York, New Jersey, and Connecticut (Cablevision's "Tri-State Footprint")*

81. This section discusses my analysis of the relevant geographic market for examining the conduct at issue. A relevant geographic market “correspond(s) to the commercial realities of the industry” and is “economically significant.”¹³⁹ It includes both current suppliers as well as suppliers who could readily enter or expand within a geographic space in response to higher price or lower quality should they exist. The 2010 *Horizontal Merger Guidelines* read: “Firms that would rapidly and easily enter the market in response to a SSNIP [small but significant and non-transitory increase in price] are market participants and may be assigned market shares.”¹⁴⁰ As set forth below, these factors can be analyzed using common evidence.

82. Plaintiffs allege that the geographic scope of the tying-product market is the area in New York, New Jersey, and Connecticut in which Cablevision operates.¹⁴¹ Plaintiffs allege that the following factors are among the economic realities that support the allegation that Cablevision's entire footprint is a geographic market: (1) all of Cablevision's service areas are located within the same DMA (the New York DMA¹⁴² or New York metropolitan area¹⁴³); (2)

¹³⁹ *Brown Shoe Co. v. United States*, 370 U.S. 294, 336-37 (1962).

¹⁴⁰ U.S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines* (revised August 19, 2010), § 9.

¹⁴¹ Fifth Amended Complaint ¶ 118.

¹⁴² Nielson Media Research divides the country into designated market areas (“DMA”) which it defines as “a group of counties that form an exclusive geographic area in which the home market television stations hold a dominance of total hours viewed.” <http://www.nielsen.com/us/en/campaigns/dma-maps.html> (accessed on August 14, 2014). The New York DMA is comprised of the counties in New York, New Jersey, and Connecticut plus one county in Pennsylvania.

¹⁴³ The New York metropolitan area can also be referred to as the New York-Newark, NY-NJ-CT-PA Combined Statistical Area. This CSA consists of Allentown-Bethlehem-Easton, PA-NJ Metropolitan Statistical Area; Bridgeport-Stamford-Norwalk, CT Metropolitan Statistical Area; East Stroudsburg, PA Metropolitan Statistical Area; Kingston, NY Metropolitan Statistical Area; New Haven-Milford, CT Metropolitan Statistical Area; New York-Newark-Jersey City, NY-NJ-PA Metropolitan Statistical Area; Torrington, CT Micropolitan Statistical Area; and, Trenton, NJ Metropolitan Statistical Area. See “Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on Uses of the Delineations of These

Cablevision's strategies and techniques, industry factors, and barriers to entry apply in all of the areas in which Cablevision operates; (3) Cablevision's pricing and tying practices apply in all of the areas in which it operates; and (4) its market dominance exists throughout the areas in which it operates.¹⁴⁴

83. Based on my review of the evidence, I conclude that there is common economic evidence to support Plaintiffs' allegation that the appropriate geographic market is Cablevision's Tri-State Footprint. Figure 12 shows Cablevision's Tri-State Footprint in 2013.¹⁴⁵

Areas," Executive Office of the President: Office of Management and Budget (February 28, 2013) at <http://www.whitehouse.gov/sites/default/files/omb/bulletins/2013/b-13-01.pdf>, p. 106.

¹⁴⁴ Fifth Amended Complaint ¶ 118.

¹⁴⁵

[REDACTED]



84. [REDACTED]

[REDACTED]¹⁴⁶ Cablevision publically emphasized that its Tri-State Footprint in the New York metropolitan area constituted a single integrated market.

[REDACTED]

[REDACTED]¹⁴⁷ Cablevision stated the following about its Tri-State Footprint:

As of December 31, 2013, we served approximately 2.8 million video customers in and around the New York metropolitan area. We believe that our cable television systems in the New York metropolitan area comprise the largest

¹⁴⁶ CVC-Marchese-03186171 at 172.

¹⁴⁷ CVC-Marchese-03186151 at 154.

metropolitan cluster of cable television systems under common ownership in the United States (measured by number of video customers).¹⁴⁸

[REDACTED]

[REDACTED]

85. Cablevision operates its Tri-State Footprint as a single cable system. This allows Cablevision to unify pricing and products across Cablevision's Tri-State Footprint. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This is

common evidence that the geographic market is Cablevision's Tri-state Footprint.

¹⁴⁸ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2013).

¹⁴⁹ CVC-Marchese-03185999 at 6004.

¹⁵⁰ CVC-Marchese-03185989 at 990 (emphasis added).

¹⁵¹ See CVC-Marchese-00581645; CVC-Marchese-00582113; CVC-Marchese-03478412; CVC-Marchese-03517303; CVC-Marchese-00581114-15; CVC-Marchese-00979033-66; CVC-Marchese-00979399-426; CVC-Marchese-01009679-80; CVC-Marchese-03518159.

86.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁵² CVC-Marchese-00472291; CVC-Marchese-00581645; CVC-Marchese-00582113; CVC-Marchese-00609896.

¹⁵³ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

88. Thus, in keeping with the *Horizontal Merger Guidelines*, I treat DirecTV, DISH, FiOS, and U-verse as competitors for TWS customers throughout Cablevision's Tri-State Footprint.

89. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

90. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁵⁴ CVC-Marchese-00738263, CVC-Marchese-00740107, CVC-Marchese-00725455, CVC-Marchese-01685836, CVC-Marchese-02463515, CVC-Marchese-00379073.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Cablevision acknowledged that FiOS could potentially enter in other areas in Cablevision's Tri-State Footprint by stating that

¹⁵⁵ By 2008, U-verse already offered video service in most of Cablevision's service area in Connecticut. See Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2008), pp. 12-13.

¹⁵⁶ See CVC-Marchese-00424475 and CVC-Marchese-00472291 [REDACTED]

¹⁵⁷ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2012), p. 10.

“Verizon may increase the number of customers in our service area to whom it is able to sell video in the future.”¹⁵⁸

92. This is common evidence that establishes the relevant geographic market as Cablevision’s Tri-State Footprint.

III.B. *Market Structure Analysis: Indirect evidence of market power*

93. As discussed above, in market-share reports and other company data, Cablevision tracks the number of its digital cable subscribers and those of its rivals in its Tri-State Footprint. Cablevision tracks the digital video subscriber counts for the following competitors: Verizon FiOS, AT&T U-verse, and DBS providers (DISH Network and DirecTV). To estimate TWS subscribers, I take the following steps:

- *Cablevision* – I obtained data on the number of Cablevision’s digital video subscribers. Table 2 calculated the percentage of digital video subscribers that are CableCARD-only subscribers.¹⁵⁹ To calculate Cablevision’s TWS subscribers each year, I net out the percentage of digital video subscribers that are CableCARD-only subscribers.
- *FiOS* – I obtained data on the number of FiOS video subscribers. I conservatively assume that all FiOS video subscribers are TWS subscribers.¹⁶⁰ This is conservative because I would be overestimating FiOS’ market share and therefore underestimating Cablevision’s market share.
- *U-verse* – I obtained data on the number of U-verse video subscribers. U-verse is an IPTV provider that provides only TWS inclusive programming packages.¹⁶¹ U-

¹⁵⁸ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2013), p. 9.

¹⁵⁹ CableCARD-only subscribers are digital subscribers who only rent CableCARDS for their households. That is, CableCARD-only subscribers do not rent any STBs for their households and do not have access to TWS. See also Table 2.

¹⁶⁰ From 2006 to 2008, FiOS subscribers could have only subscribed to one-way service by subscribing to analog video service. In 2008, FiOS transitioned to all-digital service and began offering a CableCARD option. From 2008 to 2011, FiOS subscribers could have only subscribed to one-way service by renting a CableCARD from FiOS. See FCC, “Fourteenth Report,” MB Docket No. 07-269 (adopted July 18, 2012), footnote 259. See also “Verizon Bites the CableCard Bullet,” *Multichannel News* (May 15, 2008).

¹⁶¹ See AT&T, “What is IPTV?”, available at https://www.att.com/Common/about_us/files/pdf/IPTV_background.pdf.

verse is not classified by the FCC as a “cable system”¹⁶² and therefore not subject to the CableCARD requirements that apply to cable operators.¹⁶³ Therefore, by definition, all U-verse video subscribers are TWS subscribers.

- *DBS providers* – I obtained data on the number of DBS subscribers. DBS providers use an all-digital, one-way technology to deliver video programming to set-top receivers.¹⁶⁴ Hence, DBS providers cannot deliver certain TWS like VOD and PPV using a remote solely using their one-way technology.¹⁶⁵ However, DBS providers have entered into cooperative arrangements¹⁶⁶ with other entities that allow them to provide comparable offerings of TWS such as IPG,¹⁶⁷ VOD,¹⁶⁸ and PPV using a remote¹⁶⁹ to its subscribers. DBS providers are not subject to the CableCARD requirements that apply to cable operators.¹⁷⁰ Therefore, I conservatively assume that all DBS subscribers are TWS subscribers. This is conservative because excluding DBS subscribers from the market share calculations would only increase Cablevision’s market share.

94. [REDACTED]

[REDACTED]¹⁷¹ [REDACTED]

[REDACTED] In 2005, Verizon FiOS obtained authorization to provide video service in parts of

¹⁶² FCC, “Fifteenth Report,” MB Docket No. 12-203 (adopted July 19, 2013), ¶ 28. See also National Broadband Plan, Broadband Competition and Innovation Policy, available at http://www.broadband.gov/plan/4-broadband-competition-and-innovation-policy/#_edn105.

¹⁶³ National Broadband Plan, Broadband Competition and Innovation Policy, available at http://www.broadband.gov/plan/4-broadband-competition-and-innovation-policy/#_edn105.

¹⁶⁴ FCC, “Fourteenth Report” MB Docket No. 07-269 (adopted July 18, 2012), p. 50.

¹⁶⁵ FCC, “Fourteenth Report” MB Docket No. 07-269 (adopted July 18, 2012), p. 40.

¹⁶⁶ FCC, “Fifteenth Report,” MB Docket No. 12-203 (adopted July 19, 2013), p. 54.

¹⁶⁷ See FCC, “Seventh Annual Report,” CS Docket No. 00-132 (adopted January 2, 2001), p. 81. See also FCC, “Eight Annual Report,” MB Docket No. 01-129 (adopted December 27, 2001), p. 76.

¹⁶⁸ FCC, “Fourteenth Report” MB Docket No. 07-269 (adopted July 18, 2012), p. 51.

¹⁶⁹ In 2004, a DIRECTV subscriber could order PPV using a remote only if the subscriber was connected to a land-based phone line. Today, a DIRECTV subscriber can order PPV using a remote if the subscriber is connected to a land-based phone line or the internet. See “Pay Per View: A How-To-Guide”, DIRECTV LLC (February 15, 2004), accessed through archive.org. See also https://support.directv.com/app/answers/detail/a_id/1595/~how-do-i-order-pay-per-view-movies-to-watch-on-tv%3F (accessed on July 10, 2014).

In 2004, a DISH subscriber could order PPV using a remote only if the subscriber was connected to a land-based phone line. Today, a DISH subscriber can order PPV using a remote if the subscriber is connected to a land-based phone line or the internet. See “Pay-per-view: How to Order”, DISH Network LLC (February 3, 2004), accessed through archive.org. See also <http://www.mydish.com/support/use-ppv> (accessed on July 10, 2014).

¹⁷⁰ National Broadband Plan, Broadband Competition and Innovation Policy, available at http://www.broadband.gov/plan/4-broadband-competition-and-innovation-policy/#_edn105.


Cablevision's Tri-State Footprint in 2005.¹⁷² [REDACTED]

[REDACTED] In 2007, AT&T U-verse obtained authorization to provide video service throughout its Connecticut footprint, which included parts of Cablevision's service area in Connecticut.¹⁷³ [REDACTED]

This is common evidence of market structure.

¹⁷² Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2005), p. 15.

¹⁷³ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2007), p. 13.



95. As a commercial reality, TWS is purchased by customers from their MVPD with digital programming packages. One-way service with digital video subscriptions (CableCARD rental) is only available from companies who fall under regulations requiring them to offer CableCARDS. Even within these companies, demand for digital video with one-way service is effectively zero.

96.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

97. Based on these market shares, I calculate a conservative, lower-bound estimate of HHI for TWS and digital video.¹⁷⁵ As discussed in Section II, the HHI provides a measure of

[REDACTED]

[REDACTED]

[REDACTED]

firms' market power, given the positive relationship between industry concentration and price mark-up over cost, established in well-accepted, traditional models of competition.¹⁷⁶ The HHI, therefore, provides an indirect measure of market power on which antitrust regulators rely. This is common evidence of market structure.

98. Based on their experience, the DOJ and FTC classify markets into three types:¹⁷⁷

- Unconcentrated Markets: HHI below 1,500
- Moderately Concentrated Markets: HHI between 1,500 and 2,500
- Highly Concentrated Markets: HHI above 2,500

99. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

100. To ensure the market shares in Tables 4 and 5 are consistent with other calculations reported in Cablevision's documents regarding the number of TWS and digital video subscribers it serves, I also calculate shares and HHI statistics using the minimum and maximum number of TWS and digital video subscribers reported by Cablevision (see Appendix IV). These tables yield very similar shares.

¹⁷⁶ Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 283. See also Martin, S. (1993), *Advanced Industrial Economics*, Cambridge, MA: Blackwell. ("If firms independently maximize profit, maintaining conjectures about rivals' reactions, structural relationships emerge between market shares and firm market power and between the Herfindahl index and industry-average market power. For this reason, and because the Herfindahl index combines information about the number and the size distribution of firms, it is usually regarded as the preferred measure of market concentration. . . .") Id., p. 167, footnotes omitted.

¹⁷⁷ U.S Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines* (revised August 19, 2010), § 5.3.

101. All in all, Cablevision has maintained a dominate share of TWS subscribers in its Tri-State Footprint throughout the 2005 to 2011 period.

102. *Barriers to Entry.* There exist substantial barriers to entry in the relevant markets that can be established with common evidence.¹⁷⁸ Entry of a new TWS product would require a new company to enter the MVPD market. With respect to cable companies, new entrants must incur large sunk costs to construct their networks. The cost to provide the technical infrastructure for delivery of advanced video to homes is substantial. For example, in its Thirteenth Annual Report for its Annual Assessment of the Status of Competition for the Delivery of Video Programming, the FCC reported that cable operators had invested over \$100 billion to construct incremental advanced two-way fiber networks.¹⁷⁹ This is common evidence of the existence of barriers to entry.

103. Consider the deployment costs of Verizon's FiOS fiber-to-the premises ("FTTP") network. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁷⁸ McAfee, R. P., Mialon, H., and Williams, M. (2004), "What is a Barrier to Entry?" *American Economic Review*, vol. 94, pp. 461-465.

¹⁷⁹ FCC, "Thirteenth Annual Report," MB Docket. No. 06-189 (adopted November 27, 2007), ¶ 52.

¹⁸⁰ CVC-Marchese-03400157 at 175.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This is common evidence of substantial barriers to entry.

105. Another barrier to entry is the cost of obtaining programming. To compete with a provider like Cablevision, an entrant would have to secure difficult and expensive rights from several companies to transmit a compelling package of programming.¹⁸³ This is common evidence of the existence of barriers to entry.

106. In addition to high costs, Verizon has to face and overcome Cablevision's advantage as an incumbent [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁸¹ [REDACTED]

[REDACTED]

[REDACTED]

¹⁸² CVC-Marchese-01673087 at 88.

¹⁸³ FCC, "Fourteenth Report," MB Docket No. 07-269 (adopted July 18, 2012), ¶ 263.

¹⁸⁴ Deposition of Kristin Dolan (April 8, 2014), 68:15 - 70:17.

¹⁸⁵ CVC-Marchese-03478412 at slide 14.

108. This common evidence of the existence of significant barriers to entry, together with Cablevision's high market shares, corroborates that Plaintiffs are capable of proving that Cablevision has possessed market power throughout the relevant period.

III.C. *Market Power: Conclusion based on market structure analysis*

109. For all the reasons explained in this section, my conclusion based on an analysis of the structure of the relevant markets is that Plaintiffs are capable of proving that Cablevision

186

<http://investing.businessweek.com/research/stocks/people/person.asp?personId=240477046&ticker=CVC&previousCapId=778699&previousTitle=Cablevision%20SA> (accessed August 11, 2014).

¹⁸⁷ Deposition of James Nuzzo (May 7, 2014), 120:9-24.

¹⁸⁸ Deposition of James Nuzzo (May 7, 2014), 155:13-24.

¹⁸⁹ Deposition of Michael Olsen (April 25, 2014), 8:16-19.

¹⁹⁰ Deposition of Michael Olsen (April 25, 2014), 245:22-246:4.

¹⁹¹ Deposition of Matthew Weiss (November 6, 2013), 14:3-6.

¹⁹² Deposition of Matthew Weiss (November 6, 2013), 121:4-8.

has market power in the relevant tying-product market, thus enabling it to restrain trade in the tied-product market. This conclusion can be established with common evidence.

III.D. *Direct Evidence of Market Power: Price discrimination*

110. Cablevision's exercise of market power is directly evidenced by the substantial price discrimination in which it engages. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

111. A competitive firm is a price-taker, unable to charge different prices to different customers for the same products or services based on their willingness-to-pay. By definition, price-setting behavior implies that a firm has market power—the ability to raise price above competitive levels.¹⁹³ As stated in a well-known textbook:

A workable definition of price discrimination is the ability to set prices so that the difference between average prices and average costs varies between different sales of either the same good or closely related goods. Two necessary conditions for price discrimination to arise are then immediately apparent. The first is that the firm must possess *market power*: without it, the price of all units of all goods will be driven down to the level of costs by competition, and price discrimination cannot arise.¹⁹⁴

¹⁹³ See, e.g., Varian, H. (1989), *Microeconomic Analysis*, W. W. Norton & Company; Posner, R. (1978), *Antitrust Law: An Economic Perspective*, University of Chicago Press; and Stole, L. (2007), "Price Discrimination in Competitive Environments," *Handbook of Industrial Organization*, North Holland, vol. 3, pp. 2222-2299.

¹⁹⁴ Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, p. 160 (emphasis in original, internal citation omitted). Church and Ware further explain: "The second necessary condition for price discrimination is that resale or arbitrage must be prevented. The problem is that the consumers of the low-priced goods may be tempted to resell them to consumers who were intended to buy the high-priced goods, and unravel the firm's careful price discrimination schemes." *Id.*

112. Carlton and Perloff state that “[n]ot every seller who charges a nonuniform price is price discriminating,”¹⁹⁵ and that price discrimination is defined as “any nonuniform pricing policy used by a firm with market power to maximize its profits.”¹⁹⁶

113. For price discrimination to succeed, a firm must possess some market power.¹⁹⁷

Below are excerpts that come from standard Industrial Organizational literature.

For price discrimination to succeed, a firm must have some *market power*, know or be able to infer consumers’ willingness to pay, and be able to prevent or control resales.¹⁹⁸

Another remark attributed to George Stigler is that price discrimination (in the economists’ sense) is the best evidence of the presence of *market power*.¹⁹⁹

114. [REDACTED]

[REDACTED]. The goal of differential pricing is to offer more favorable terms (price) for the same services to some customers relative to others based on willingness-to-pay. Cablevision’s highest tiers of cable service with TWS are iO Silver and iO Gold. The iO Gold package offers access to “over 350 all digital channels, including 90 premium movie channels (including 38 in HD). In total there are over 110 HD channels included in the iO Gold package.”²⁰⁰ The iO Silver package “includes everything in iO Gold except for Flix,

¹⁹⁵ Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 293.

¹⁹⁶ Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 290.

¹⁹⁷ Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 308.

¹⁹⁸ Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 308.

¹⁹⁹ Baker, J. and Bresnahan, T. (1992), “Empirical Methods of Identifying and Measuring Market Power,” *Antitrust Law Journal*, Vol. 61, Issue 3, pp. 3-16 at p. 10 (emphasis added).

²⁰⁰ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2010), p. 5.

Smithsonian and premium movie channels from HBO, Cinemax and The Movie Channel.”²⁰¹

Figures 15 to 18 show, for example, the considerably different prices charged by Cablevision from 2006 to 2011 to customers in Cablevision’s Tri-State Footprint who subscribe to service for iO Silver or iO Gold. Figure 15 and Figure 16 represent each new customer’s price paid as a fraction of the list price in the month they subscribed. It shows a bar graph or histogram of the percent of new customers paying different fractions of the list price. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This is common evidence of price discrimination, and thus market power.

115. Figure 17 and Figure 18 presents scatter plots of prices paid by new customers, again expressed as a fraction of the list price that month. [REDACTED]

[REDACTED]

[REDACTED] Figures 17 and 18 demonstrate that Cablevision price discriminates in its Tri-State Footprint. This is common evidence of price discrimination, which is direct evidence consistent with market power.

²⁰¹ Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2010), p. 5.





116. It is also important to note that until 2011, a Cablevision subscriber could purchase access to TWS without having to also purchase digital video service. Until 2011, Cablevision offered new customers a service called “iO Navigation.” iO Navigation was [REDACTED] [REDACTED]² and included additional digital music channels, access to On Demand programming and additional premium channels, and a searchable channel guide. [REDACTED]

117.

²⁰² Deposition of Gregory Buscarino (November 12, 2013), 85:20-25.

²⁰³ CVC-Marchese-00060927.

²⁰⁴ CVC-Marchese-00060927.

²⁰⁵ CVC-Marchese-00238008; CVC-Marchese-00301991.

[REDACTED]

[REDACTED]

119. Cablevision's price discrimination is common conduct across its customers in its Tri-State Footprint. Cablevision's conduct in charging discriminatory prices to its subscribers in its Tri-State Footprint is evidence of market power exercised against a downward-sloping demand curve comprised of customers with different willingness to pay (a composition common to almost all demand curves).

²⁰⁶ See CVC-Marchese-00307946; CVC-Marchese-00313108; CVC-Marchese-00367670.

III.E. *Direct Evidence of Market Power: Strategic behavior*

120. In an oligopolistic market, “each firm is aware that other firms’ actions can affect its profit.”²⁰⁷ Thus, oligopolistic firms have an incentive to monitor and predict the actions of other firms.

121. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

123. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

²⁰⁷ See Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley Pearson, p. 160.

²⁰⁸ CVC-Marchese-00229176; CVC-Marchese-00229177; CVC-Marchese-00461996; CVC-Marchese-00461997; CVC-Marchese-03517303.

[REDACTED]

²¹⁰ CVC-Marchese-01683233.

²¹¹ CVC-Marchese-01683233 at slide 4.

²¹² CVC-Marchese-01683233 at slides 54 and 59.

[REDACTED]

[REDACTED]²¹⁴

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

125. In sum, I have shown that Plaintiffs can demonstrate, through indirect as well as direct evidence, that Cablevision has market power in the tying-product market using evidence common to the class.

IV. AN ECONOMIC ANALYSIS OF ANTITRUST INJURY AND DAMAGES

126. This section provides an economic analysis of whether Class members during the relevant time period and in the relevant area have paid supra-competitive prices for the tied product (i.e., STBs) as a result of Cablevision's tying product, and thus have suffered a common "antitrust injury" from that tying product.

IV.A. *Antitrust Injury and Damages Analysis*

127. I calculate the but-for prices that would have been paid by Cablevision's subscribers for STBs using Cablevision's STB acquisition costs. Direct economic evidence that all proposed class members have paid supra-competitive prices for STBs can be established by comparing Cablevision's costs and rental rates for STBs.

²¹³ CVC-Marchese-01683233 at slide 13.

²¹⁴ CVC-Marchese-01683233 at slide 63.

²¹⁵ CVC-Marchese-01683233 at slides 21-38.

128. The methodology I use follows the standard market performance methodology presented in well-known Industrial Organization textbooks.²¹⁶ I conduct net present value (“NPV”)²¹⁷ calculations to calculate competitive monthly rental rates. The NPV methodology used in my damages analysis dates back to Irving Fisher’s work on capital budgeting in the early 1900s, and has been incorporated in countless works including Modigliani and Miller’s Nobel Prize winning work on asset valuation.²¹⁸ Moreover, it is used every day by businesses and governments, as discussed below. It is the basis for valuing investments, returns, or capital value over time. It is taught to countless students in economics, business, and accounting every year in educational institutions around the world. The basic calculation of a competitive rate of return on investments, and hence the but-for, competitive price, can be found in literally hundreds of textbooks.²¹⁹ A competitive rate of return is the rate of return that earns a firm zero economic profits.²²⁰

²¹⁶ See, e.g., Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, Chapter 12. See also Hausman, Jerry A. and J. Gregory Sidak (2007), “Evaluating Market Power Using Competitive Benchmark Prices Rather than the Hirschman-Herfindahl Index,” *Antitrust Law Journal*, vol. 74, pp. 387-407.

²¹⁷ The NPV of an investment equals the difference between its market value and its cost. The first step in calculating the NPV of an investment is to estimate the expected future cash flows. The second step is to estimate the relevant discount rate or return for investments with this level of risk. The final step is to calculate the present value of the cash flows and subtract the initial investment. See, e.g., Bernheim, B. and Whinston, M. (2008), *Microeconomics*, Boston, MA: McGraw-Hill Irwin, pp. 352-362.

²¹⁸ See Jones, T. and Smith, J. (1982), “An Historical Perspective of Net Present Value and Equivalent Annual Cost,” *The Accounting Historian’s Journal*, Vol. 9, No. 1, pp. 103-110. (“The first reference to NPV in American economic literature appeared in 1907 in Irving Fisher’s *The Rate of Interest*. This important work was revised and reissued in 1930 as *The Theory of Interest*.”) Id., p. 105. See also Modigliani, F. and Miller, M. (1958), “The Cost of Capital, Corporation Finance and the Theory of Investment,” *American Economic Review*, Vol. 48, No. 3, pp. 261-297.

²¹⁹ See, e.g., Bernheim, B. and Whinston, M. (2008), *Microeconomics*, Boston, MA: McGraw-Hill Irwin, pp. 352-362; and Pindyck, R. and Rubinfeld, D. (1997), *Microeconomics*, Upper Saddle River, New Jersey: Prentice-Hall, pp. 555-559.

²²⁰ Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, p. 21; Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 708.

129. The NPV is the preferred approach, in principle, to assess the profitability of a proposed investment.²²¹ Principles of the NPV methodology are relied on in both the private and public sector for investment analyses.²²² For example:

- The FDIC website includes a NPV calculator that assists in “evaluating the costs of loan modification compared to foreclosure.”
- The U.S. Department of the Treasury states that the price of a bond “is equal to the present value of the bond’s expected cash flows.”

130. Firms regularly rely on the NPV methodology to determine whether or not an investment should be pursued. The net present value rule is that “[a]n investment should be accepted if the net present value is positive and rejected if it is negative.”²²³

131. The methodology I use follows the standard market performance methodology presented in well-known Industrial Organization textbooks.²²⁴ In the present case, the application of this methodology requires four types of economic evidence, all of which are common: (1) Cablevision’s rental rates for STBs in its Tri-State Footprint; (2) Cablevision’s costs of purchasing these STBs; (3) information on the number of years that Cablevision earns rental revenues for these STBs; and (4) Cablevision’s competitive rate of return. Using this information, I can calculate but-for competitive monthly rental rates for given types of STBs, where the competitive rate covers the acquisition cost and Cablevision’s opportunity cost of funds (competitive rate of return). Cablevision generally categorizes its STBs into four types:

²²¹ Ross, S., Westerfield, R., and Jordan, B. (2008), *Fundamentals of Corporate Finance*, Eighth Edition, McGraw-Hill/Irwin, p. 268.

²²² See <http://www.fdic.gov/consumers/loans/prevention/NPVCALCULATOR.html> (accessed on August 14, 2014) and Jones, Jonathan D. (1999), “Total Return Analysis,” U.S. Department of the Treasury, Risk Management Series.

²²³ Ross, S., Westerfield, R., and Jordan, B. (2008), *Fundamentals of Corporate Finance*, Eighth Edition, McGraw-Hill/Irwin, p. 267.

²²⁴ See, e.g., Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, Chapter 12. See also Hausman, Jerry A. and J. Gregory Sidak (2007), “Evaluating Market Power Using Competitive Benchmark Prices Rather than the Hirschman-Herfindahl Index,” *Antitrust Law Journal*, vol. 74, pp. 387-407.

HD DVR, SD DVR, HD, and SD. By comparing Cablevision's actual monthly rental rates²²⁵ to the competitive rental rates I can determine, using common evidence, the amount of supra-competitive prices paid in the aggregate for the tied product (i.e., STBs in Cablevision's Tri-State Footprint).

132. [REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TABLE 6
ASSUMPTIONS FOR CALCULATING THE NET PRESENT VALUE OF AN STB

Category	STB Type	Assumption	Source
Discount Rate	All Types	████	CVC-Marchese-00905734; CVC-Marchese-00940067; CVC-Marchese-03463535; CVC-Marchese-03463551; CVC-Marchese-00955436; CVC-Marchese-00244560
Income Tax Rate	All Types	39.1%	OECD Tax Database: Table II.1 ¹
Repair Percentage ²	HD/DVR	████████████████████	CVC-Marchese-03606486
		██████████████████	
		██████████████████	
		██████████████████	
	SD/DVR	████████████████████	CVC-Marchese-03606486
		██████████████████	
		██████████████████	
		██████████████████	
	HD	████████████████████	CVC-Marchese-03606486
		██████████████████	
		██████████████████	
		██████████████████	
	SD	████████████████████	CVC-Marchese-03606486
		██████████████████	
		██████████████████	
		██████████████████	
CPE R&M ³	HD/DVR	████	CVC-Marchese-03574905
	SD/DVR	████	CVC-Marchese-03574905
	HD	██████	CVC-Marchese-03574905
	SD	██████	CVC-Marchese-03574905
Warranty ⁴	All Types	██████	CVC-Marchese-00032203; CVC-Marchese-00032412
Depreciation	All Types	██████	CVC-Marchese-00779967; CVC-Marchese-03556871
STB Lifetimes	All Types	I estimate the STB lifetimes for each STB type using data from Cablevision's database	Cablevision Database: NFOV_BOX_INVENTORY_HISTORY and NFOV_KOM_BOX_TYPE_MAPPING

^{/1} OECD: Table II.1 – Corporate Income Tax Rates: Basic/Non-Targeted – (2000 – 2014, Updated May 2014) at http://www.oecd.org/tax/tax-policy/tax-database.htm#C_CorporateCapital. The 2014 combined corporate income tax rate for the United States is 39.1%.

2. _____

■ _____

■ _____

d. _____

134. Using this information, my analysis of whether and to what extent the STB rental prices were supra-competitive consists of the following steps:

Step 1: Calculate competitive monthly rental rates for given types of STBs:

- a. Use assumptions identified in Cablevision documents pertaining to the categories listed in Table 6.
- b. Use Cablevision's STB acquisition costs specified in contracts between Cablevision and STB manufacturers [REDACTED]²²⁶
- c. Use STB lifetimes from Cablevision's database
- d. Solve for the monthly rental rate that yields an average NPV = 0 at Cablevisions internal cost of capital (their opportunity cost of investment funds).

Step 2: calculate supra-competitive prices for a given type of STB:

- a. Subtract the competitive monthly rental rate from Cablevision's actual monthly rental rate, which yields the overcharge
- b. Multiply the overcharge by the monthly number of such STBs in Cablevision's Tri-State Footprint.²²⁷

135. Table 7 summarizes the results of the calculations described in Steps 1 and 2. The results, based on common evidence, show that Cablevision has charged supra-competitive rental rates for STBs in its Tri-State Footprint.

²²⁶ See CVC-Marchese-00032194; CVC-Marchese-00032201; CVC-Marchese-00032203; CVC-Marchese-00032242; CVC-Marchese-00032277; CVC-Marchese-00032356; CVC-Marchese-00032359; CVC-Marchese-00032362; CVC-Marchese-00032371; CVC-Marchese-00032382; CVC-Marchese-00032387; CVC-Marchese-00032390; CVC-Marchese-00032401; CVC-Marchese-00032406; CVC-Marchese-00032409; CVC-Marchese-00032412; CVC-Marchese-00094442; CVC-Marchese-00094462; CVC-Marchese-00094466; CVC-Marchese-00094520; CVC-Marchese-00094551; CVC-Marchese-00094578; CVC-Marchese-00094580; CVC-Marchese-00094583; CVC-Marchese-00094586.

²²⁷ For a given type of STB, the monthly number of STBs equals the total number of STBs leased by residential customers.



IV.B. *Antitrust Injury and Damages Robustness Analysis 1*

136. As a robustness check and alternative, I calculate the but-for rental rates that would have been paid by Cablevision's subscribers for STBs using the actual prices of STBs in Canada.²²⁸ In Canada, there are two separate markets: one for MVPD service and one for STBs. Cable companies in Canada do not tie the sale of their multichannel video programming services to the rental of STBs. As a result, STBs are sold by both cable companies and retail consumer electronics stores such as Best Buy Canada Ltd. ("Best Buy"), as the U.S. Congress envisioned for the U.S. market. Given that Canadian companies carry some of the same models, that many of the retailers operate in the U.S. and Canada (e.g., Best Buy and eBay), and given Canada's developed market economy, this offers a useful point of comparison for what a competitive U.S. market might look like.

137. Best Buy's STB prices in Canada are similar in every respect to those offered by the three major Canadian cable companies—Shaw, Rogers, and Videotron. Best Buy does not

²²⁸ See Maxbauer, A. and Kurlak, R., *The World Market for Digital Set-Top Boxes & iDTVs 2010 Edition*, IMS Research, July 2010. ("Canadians' demand for new [digital television] equipment is not large enough to influence design specifications significantly. . . .") Id., p. 89.

operate any cable systems; its STB prices are by definition not affected by cable regulations. The STB and MVPD markets are separate markets with different sets of competitors. There is no reason to believe that MVPD regulation affects the price of STBs.

138. Note that in a but-for world in Cablevision's Tri-State Footprint where there is a retail market for the purchase of STBs, the appropriate retail price for STBs should exclude the cost of CableCARDS. CableCARDS clearly are not necessary in the but-for world because they are not necessary in markets where consumers are able to purchase STBs (from cable companies and retailers such as Best Buy), such as Canada. In the United States, a lack of a strong retail market for STBs prompted the FCC to establish the CableCARD requirement.²²⁹ If the U.S. already had a strong retail market for the purchase of STBs, the CableCARD requirement would have been unnecessary. The FCC only mandated the temporary use of CableCARDS in an effort to meet the U.S. Congress's mandate as stated in the Telecommunications Act of 1996:

The Commission shall, in consultation with appropriate industry standard-setting organizations, adopt regulations to assure the commercial availability, to consumers of multichannel video programming and other services offered over multichannel video programming systems, of converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.²³⁰

139. To calculate but-for prices that would have been paid by Class members during the relevant time period and in the relevant area, I use actual STB prices offered in Canada by Best Buy and Canadian MVPDs.²³¹ Note this is conservative in that retail prices include retail

²²⁹ FCC, "Notice of Inquiry," MB Docket No. 10-91 (CS Docket No. 97-80) PP Docket No. 00-67, FCC 10-60 (adopted April 21, 2010), ¶ 8.

²³⁰ Telecommunications Act of 1996, which added Section 629 to the Communications Act. (February 8, 1996).

²³¹ <http://www.bestbuy.ca/en-CA/home.aspx> (accessed July 14, 2014). Best Buy is the world's largest multi-channel consumer electronics retailer. <http://phx.corporate-ir.net/phoenix.zhtml?c=83192&p=IROL-IRhome> (accessed July 14, 2014). Best Buy also maintains a "Lowest Price Guarantee." <http://www.bestbuy.ca/en-CA/help/lowest-price->

margins added on top of acquisition costs. Importantly, my damages analysis conservatively excludes prices at Best Buy that include coupons for discounts based on cable subscriptions offered from cable companies.

140. In addition, note that this analysis is an underestimate of damages because the competitive market in Canada is constantly adopting newer and better STB technologies ■■■■■

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141. My analysis consists of the following steps:

Step 1: Calculate competitive monthly rental rates for given types of STBs:

- a. Use assumptions identified in Cablevision documents pertaining to the categories listed in Table 6.
- b. Use Canadian retail STB prices
- c. Use STB lifetimes from Cablevision's database
- d. Solve for the monthly rental rate that yields an average NPV = 0

Step 2: Calculate supra-competitive prices for a given type of STB:

- a. Subtract the competitive monthly rental rate from Cablevision's actual monthly rental rate, which yields the overcharge

guarantee/hc1001.aspx?Lang=en-CA&HelpTitleId=hc1001 (accessed July 14, 2014). ("If you find a lower price online, in-store, or in print before you buy or within 30 days of your purchase we'll beat that price by 10% of the difference.") Id.

- b. Multiply the overcharge by the monthly number of such STBs in Cablevision's Tri-State Footprint²³²

142. I do not compare Cablevision's STB rental rates to Canadian cable companies' STB rental rates for several reasons. STBs are sold in Canada by both cable companies and retailers such as Best Buy. They are also rented by cable companies at several different rental rates (monthly rent with no commitment on length of term, monthly rent with a commitment on length of term, and rent-to-own). As a result, the rental market for STBs in Canada differs fundamentally from the rental market for STBs in the U.S., where tying by cable companies has eliminated the ability of cable subscribers to purchase STBs, and has limited alternative rental options. When there are many options for consumers to choose between, the set of consumers for which rental prices are set is now fundamentally different, changing the purpose of the rental contract, the number of rental contracts offered with different terms (multiple varieties are offered within a cable company in Canada), and the pricing outcome. For this reason, STB rental rates in Canada do not provide relevant, but-for prices for use in a damages analysis.

143. Table 8 summarizes the results of the calculations described in Steps 1 and 2. The results, based on common evidence, show Cablevision charged supra-competitive rental rates for STBs in its Tri-State Footprint.

²³² For a given type of STB, the monthly number of STBs equals the total number of STBs leased by residential customers.



144. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

IV.C. *Retail margins as an additional robustness check on damage magnitude*

145. [REDACTED]

[REDACTED]

[REDACTED] As a robustness check on that magnitude, I can gauge the magnitude in damages relative to a hypothetical purchase of an STB from a big-box retailer, if such a purchase had been possible and if the hypothetical retailer sold the STB at a typical retail mark-up. This straight forward back-of-the-envelope check simply asks how much cheaper would it have been for a customer had they been able to buy their STB from a hypothetical big-box retailer rather than renting it from Cablevision. I then compare the magnitude of this overcharge to the magnitude of overcharge from the but-for prices and NPV economic model above.

146. I can use data on retail margin estimates from internal documents from Scientific Atlanta (“SA”) which provide estimates of expected retail margins big-box retailers would charge if they sold STBs at retail. [REDACTED]

[REDACTED]

147. This robustness calculation consists of the following steps for each type of STB (i.e., HD, HD DVR, SD, SD DVR):

Step 1: Calculate the expected lifetime of new STBs put into service by Cablevision.

Step 2: Calculate retail STB prices proposed Class members would have paid hypothetically at retail

a. Use Cablevision’s STB acquisition costs.

b. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]²³⁴

²³³ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

²³⁴ CISCOCAB00000029; CISCOCAB00000033; CISCOCAB000000281 at slide 14; CISCOCAB000002469 at 73; CISCOCAB000003479 at 94.

Step 3: Calculate the present value (“PV”) of the STB rental rates paid over the expected length of time the STB will be rented for based on Cablevision’s data.²³⁵

Step 4: Calculate the price difference between the hypothetical sale price and the expected PV of rental rates.

148. Table 9 shows summary statistics of the overcharges calculated using the methodology described above. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

149. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

²³⁵ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

²³⁶ The overcharge rate is defined as the volume-weighted average of the ratio of (1) the difference between the present discounted value of the monthly rental rate stream and the retail price to (2) the present discounted value of the monthly rental rate stream.



August 15, 2014


Justine S. Hastings, Ph.D.

APPENDIX I: RESUME OF JUSTINE S. HASTINGS

JUSTINE S. HASTINGS

Brown University
Department of Economics
64 Waterman Street
Providence, RI 02912

E: justine_hastings@brown.edu
W: www.justinehastings.com
P: 401.863.2691

Education

University of California at Berkeley, 1996-2001
Doctor of Philosophy, 2001
Field: Economics
Specialization: Industrial Organization, Public Economics, Econometrics.

University of California at Davis, 1992-1996
Bachelor of Arts in Economics with Mathematics minor, *Summa Cum Laude*, and
Master of Science in Agriculture and Resource Economics.

Academic Employment

Brown University, July 2010 to present
Associate Professor with tenure, Department of Economics

Yale University, July 2008 to June 2010
Associate Professor, Department of Economics

Yale University, July 2003 to June 2008
Assistant Professor, Department of Economics

Dartmouth College, July 2001 to June 2003
Assistant Professor, Department of Economics

Academic Affiliations

Research Associate, National Bureau of Economic Research,
2011 to present. *Program Affiliations in Industrial Organization, Public
Economics, Aging, Education, and Energy and Environmental Economics.*

Research Fellow, Brown University Population Studies and Training Center, July
2010 to present.

Faculty Fellow, Institution for Social and Policy Studies, Yale University, July 2005 to present.

Faculty Research Fellow, National Bureau of Economic Research, 2003 to 2011. *Program Affiliations in Industrial Organization, Public Economics, Aging, Education, and Energy and Environmental Economics.*

Policy and Advisory Positions

Governor's Council of Economic Advisors, State of Rhode Island, May 2014 to present.

Advisor, Academic Research Council, United States Federal Consumer Financial Protection Bureau, May 2012 to present.

Editorial Positions

Co-Editor, *Journal of Public Economics*, January 2014 to present.

Editorial Board, *Journal of Economic Literature*, January 2012 to present.

Managing Editor, *International Journal of Industrial Organization*, May 2011 to December 2013.

Co-Editor, *International Journal of Industrial Organization*, 2010 to May 2011.

Associate Editor, *International Journal of Industrial Organization*, 2009-2010.

Teaching

Graduate Industrial Organization, Graduate Public Economics, Education Economics and Policy.

Publications

"School Choice and College Attendance: Evidence from Randomized Lotteries," with David Deming, Thomas Kane and Douglas Staiger. March 2014. *American Economic Review*.

"Fungibility and Consumer Choice: Evidence from Commodity Price Shocks," with Jesse Shapiro. *Quarterly Journal of Economics*, November 2013. *Lead Article and Editor's Choice.*

"Financial Literacy, Financial Education and Economic Outcomes," with Brigitte C. Madrian and William L. Skimmyhorn. *Annual Review of Economics*. January 2013.

"The First of the Month Effect: Consumer Behavior and Store Responses," with Ebonya Washington. *American Economic Journal: Economic Policy*. May 2010.

"Investigating Income Effects in Scanner Data: Do Gasoline Prices Affect Grocery Purchases?" with Dora Gicheva and Sofia Villas Boas. *American Economic Review*. May 2010.

"Information, School Choice and Academic Achievement: Evidence from Two Experiments," with Jeffrey M. Weinstein. *Quarterly Journal of Economics*, November 2008.

"Reformulating Competition? Gasoline Content Regulation and Wholesale Gasoline Prices," with Jennifer Brown, Erin Mansur, and Sofia Villas-Boas, *Journal of Environmental Economics and Management*, January 2008.

"The Effect of Randomized School Admissions on Voter Participation" with Thomas Kane, Douglas Staiger, and Jeffrey Weinstein, *Journal of Public Economics*, June 2007.

"Gender, Performance and Preferences: Do Girls and Boys Respond Differently to School Environment? Evidence from School Assignment by Randomized Lottery," with Thomas Kane and Douglas Staiger, *American Economic Review*, May 2006.

"Vertical Integration in Gasoline Supply: An Empirical Test of Raising Rivals' Costs," with Richard J. Gilbert, *Journal of Industrial Economics*, December 2005.

"Vertical Relationships and Competition in Retail Gasoline Markets: Empirical Evidence from Contract Changes in Southern California," *American Economic Review*, March 2004.

"Abatement, Consumption, Capital, and Pollution Accumulation in an Optimal Program," by Justine S. Ghassemi and Michael R. Caputo, *Pacific and Asian Journal of Energy*, Vol. 7 (1), 1997 (Senior Honors Thesis, UC Davis).

Working Papers

"Advertising, Reputation and Environmental Stewardship: Evidence from the BP Oil Spill," with Lint Barrage and Eric Chyn. NBER Working Paper 19838, (January 2014).

"Competition and Regulation in Advertising: The Case of Mexico's Privatized Pension Market," with Ali Hortacsu and Chad Syverson. NBER Working paper w18881, March (2013). *Revision requested, Econometrica*.

"Are Some Degrees Worth More than Others: Evidence from College Admission Cutoffs in Chile," with Christopher Neilson and Seth Zimmerman. NBER Working Paper 19241 (July 2013).

"Information, Incentives and Student Loan Design." with Harald Beyer, Christopher Neilson, Phillip Ross and Seth Zimmerman. Working Paper, Brown University, June (2013).

"The Impact of Information on Postsecondary Investments: Evidence from the Chilean Student Loan System," with Christopher Neilson, Anely Ramirez and Seth Zimmerman. Working Paper, Brown University, June (2013).

"(Un)Informed College Choice: Evidence from Chile." with Christopher Neilson, Anely Ramirez, Unika Shrestha and Seth Zimmerman. Working paper, Brown University (May 2013).

"Fettered Consumers and Sophisticated Firms: Evidence from Mexico's Privatized Social Security Market," with Fabian Duarte. NBER Working paper w18582 November (2012).

"The Effect of School Choice on Intrinsic Motivation and Academic Outcomes," with Christopher Neilson and Seth Zimmerman. NBER Working Paper w18324, August (2012).

"How Financial Literacy and Impatience Shape Retirement Wealth and Health Investment Behaviors," with Olivia S. Mitchell, NBER Working Paper w16740, (January 2011).

"Investor Decisions and the Financial Crisis in Mexico's Privatized Social Security Market," NBER RRC Working Paper, September (2010).

"Fees, Framing, and Financial Literacy in the Choice of Pension Manager," with Olivia Mitchell and Eric Chyn. Wharton Pension Research Council Working Paper, July (2010).

"Wholesale Price Discrimination and Regulation: Implications for Retail Gasoline Prices," Yale University Working Paper, February (2009).

"Financial Literacy, Information, and Demand Elasticity: Survey and Experimental Evidence from Mexico," with Lydia Tejeda-Ashton. National Bureau of Economic Research Working Paper No. 14538, December (2008). *Revise and Resubmit, American Economic Journal: Economic Policy.*

"Heterogeneous Preferences and the Efficacy of Public School Choice," with Thomas Kane and Douglas Staiger. Combines and replaces National Bureau of Economic Research Paper Working Papers No. 12145 and No. 11805. June (2008), Revised June (2009).

Work in Progress

"Impatience, Information and Investment Choice: Field Experimental Evidence in Mexico's Privatized Social Security System." Paper in progress.

"The Impact of Loan Policy Design on Postsecondary Education Markets: Evidence from Chile." with Christopher Neilson and Seth Zimmerman. Paper in progress.

"The Effect of College Loans on College Achievement, Tuition Expenditures, and Labor Market Outcomes: Evidence from Chile" with Christopher Neilson and Seth Zimmerman. Paper in progress.

Book Chapters, Book Reviews, and Other Publications

"Financial Literacy: What we know and directions for the future." *Annual Review of Economics*, forthcoming.

Review of *Nudge: Improving Decisions about Health, Wealth, and Happiness*, by Richard H. Thaler and Cass R. Sunstein, Yale University Press (2008). *Journal of Economic Literature*, December (2009).

Fellowships and Awards

United States Social Security Administration Research Grant, *The Impact of Risk and the Financial Crisis on Investor Perceptions of Privatized Social Security and Retirement Planning*. Principal Investigator, 2011-2012.

United States Social Security Administration Research Grant, *Investor Decisions and the Financial Crisis in a Privatized Social Security Market*. Principal Investigator, 2009-2010.

MacArthur Foundation How Housing Matters to Families and Communities Grant. *Estimating the Impact of Housing Subsidies on Family Outcomes: Evidence from Mexico's Housing Subsidy Programs*. Principal Investigator, 2011-2014.

National Bureau of Economic Research Pilot Grant (National Institute of Health subaward), "Health Literacy and Preventative Health Care: Survey and Experimental Interventions in Mexico's Public Health Care System." 2011.

National Institute of Health Grant Number R01AG032411-01A2, *Social Security Privatization: Investment Choice, Competition and Field Experiments in Mexico*, Principal Investigator. 2009-2014.

United States Social Security Administration Research Grant, *Financial Literacy, Short-run Impatience, and the Determinants of Savings and Financial Management*. Co-Investigator (with Olivia Mitchell), 2009-2010.

United States Social Security Administration Research Grant, *Investor Decisions and the Financial Crisis in a Privatized Social Security Market*. Principal Investigator, 2009-2010.

United States Social Security Administration Research Grant, *Fund Choices in a Private Accounts System: Implications for Disparities in Wealth at Retirement*. Principal Investigator, 2008-2009.

Smith Richardson Foundation Grant, *Preferences, Information, and Parents' Choice Behavior in Public School Choice*. Principal Investigator, 2006-2008.

United States Department of Education Grant for Research in Education Finance, Leadership, and Management, Co-Investigator, (with Thomas Kane and Douglas Staiger), 2004-2009.

Yale University Junior Faculty Fellowship, 2004-2005.

Institution for Social and Policy Studies Grant for Research in Social Sciences Using Field Experiments: 2004-2006.

National Science Foundation Grant, *Estimating Demand with Consumer Heterogeneity: an Application to Wholesale Price Regulation in Retail Gasoline Markets*. Principal Investigator, 2003-2005.

Winner of the Competition and Policy Center Thesis Prize, University of California at Berkeley, 2002.

Nelson A. Rockefeller Center at Dartmouth College, Junior Faculty Research Grant, 2002.

Nelson A. Rockefeller Center at Dartmouth College, Public Policy Research Grant, 2002.

California Energy Studies Grant, with Richard J. Gilbert, 2002-2003.

Outstanding Graduate Student Instructor Award, 2001.

Department Fellowship for Continuing Students, Department of Economics, U.C. Berkeley, 2000.

California Energy Studies Grant, with Richard J. Gilbert, 1999-2000 and 2000-2001.

John M. Ohlin Foundation Fellowship in Law and Economics, 1999.

Institute of Business and Economic Research, Student Grant, 1999.

Professional Activities

Referee for *American Economic Review*, *Econometrica*, *Journal of Political Economy*, *Quarterly Journal of Economics*, *Review of Economic Studies*, *AEJ Applied Economics*, *AEJ Economic Policy*, *AEJ Micro-economics*, *Review of Economics and Statistics*, *The RAND Journal*, *Journal of Public Economics*, *Journal of Labor Economics*, *Journal of Industrial Economics*, *Journal of Development Economics*, *Journal of Economics and Management Strategy*, *Review of Industrial Organization*, *International Journal of Industrial Organization*, *Journal of Human Resources*, *Economic Journal*, *Journal of Law and Economics*, *The Energy Journal*, *European Economic Review*.

Member: American Economic Association (AEA) and Committee on the Status of Women in the Economics Profession (CSWEP)

Presentations and Invited Seminars, Academic

2014 - : Princeton University, Harvard University, U.S. Office of Management and Budget, Calvó-Armengol Conference Barcelona GSE.

2013: U.S. Department of Justice, NBER Education Economics Spring Meetings, U.S. Consumer Financial Protection Bureau, Toulouse School of Economics, University of Chicago, NBER CCER Conference on China and the World Economy, University of Chicago Booth School of Business, ITAM, MIT CEEPR, Stanford University CEPA.

2012: Presenter at AEA session on *Designing Effective School Choice Mechanisms*, Ohio State University, Paris School of Economics, NBER Public Economics program meetings, NBER Summer Institute on Behavioral Industrial Organization, NBER Summer Institute on Social Security, Boston University, NBER Winter Public Economics Meetings.

2011: Presenter at AEA session on *No Child Left Behind*, Presenter winter NBER Industrial Organization Meetings, Chicago Booth School of Business, Northwestern Economics, NBER Summer Institute Household Finance and Education meetings, NBER Winter Household Finance Meetings.

2010: Presenter at AEA session on *Competition and Market Structure*, Harvard/MIT joint Public Economics seminar, Social Security Retirement Research Council Meetings, Wharton Retirement Research Council meetings, New York University Industrial Organization Conference.

2009: Presenter at AEA sessions *The Effects of Financial Literacy on Financial Decision-Making* and *Topics in International Public Economics*, NBER Industrial Organization Winter Meetings, Northwestern University, Harvard University, Brown University Education Department, Brown University Economics Department, NBER Public Economics Meetings, Clemson University, Duke University, Columbia GSB.

2008: Presenter at AEA session *Education and Occupational Choice*, presenter at AEA session on *The Behavioral Economics of Choice and the Shaping of Policy*, University of Illinois, University of California at Berkeley (ARE), University of California at San Diego, Presenter at NBER Transatlantic Public Economics Conference, Presenter at NBER Summer Institute Social Security Working Group Session, Massachusetts Institute of Technology, University of Wisconsin at Madison, University of California at Berkeley (Economics).

2007: National Bureau of Economic Research Spring Program for Education, University of Chicago Graduate School of Business, New York University Stern Business School and Steinhardt School of Education, Association of Public Policy Analysis and Management Annual Conference.

2006: AEA Session on Children's Human Capital, National Bureau of Economic Research Winter Program for Industrial Organization, Harvard University Institute for Quantitative Social Science, University of Warwick, London School of Economics, Princeton University, ESA Conference on Field Experiments, University of Connecticut, Wharton Business School, Carnegie Mellon University, Chicago Workshop on Black-White Inequality.

2005: University of California at Berkeley, University of Chicago, University of Toronto Rotman School of Business, University of British Columbia Sauder School of Business, University of Michigan Ross School of Business, Stanford University Graduate School of Business.

2003: University of California at Los Angeles, Harvard Kennedy School of Government, Columbia University, Massachusetts Institute of Technology.

2002: National Bureau of Economic Research Winter Program for Industrial Organization, Yale University School of Management and Department of Economics, Columbia University Business School and Department of Economics, University of Chicago Graduate School of Business, Northwestern University Kellogg School of Management, University of Arizona.

2001: London School of Economics.

Presentations and Invited Seminars, Non-Academic

Expert Testimony before the California State Assembly, Select Committee on Gasoline Competition, Marketing, and Pricing, April 28, 2004. California State Assembly Bill 1283 "Unbundled Supply" drafted directly from the expert testimony.

Expert Testimony before the U.S. Senate, Committee on the Judiciary, Subcommittee on Antitrust, Competition Policy and Consumer Rights, April 7, 2004.

Expert Testimony before the U.S. Senate, Committee on Government Affairs, Permanent Subcommittee on Investigations hearings into "Gasoline Prices – How are They Really Set?" May 2, 2002.

Speaker and Panelist at the 2001 Public Conference on Factors that Affect Prices of Refined Petroleum Products, Federal Trade Commission, Washington, D.C.

Testimony prior four years

UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF OKLAHOMA

Richard Healy, et al., v. Cox Communications, Inc., Case No. CIV-12-481-C

Expert Reports (2013), Deposition (2013), and Trial testimony (2013).

THE STATE OF NEW HAMPSHIRE MERRIMACK, SS. SUPERIOR COURT

State of New Hampshire v. Hess Corporation et al.

Expert Reports (2010, 2011, and 2012); Depositions (2011 and 2012); Trial testimony (2013).

APPENDIX II: DOCUMENTS CONSIDERED

Depositions

Deposition of Bradley Feldman and all exhibits
Deposition of Gary Schanman and all exhibits (February 28, 2014)
Deposition of Gregory Buscarino and all exhibits (November 12, 2013)
Deposition of James Cennamo and all exhibits (November 14, 2013)
Deposition of James Nuzzo and all exhibits (May 7, 2014)
Deposition of Kristin Dolan and all exhibits (April 8, 2014)
Deposition of Matthew Weiss and all exhibits (November 6, 2013)
Deposition of Michael Olsen and all exhibits (April 25, 2014)
Deposition of Peter White and all exhibits (April 2, 2014)
Deposition of Stephanie Reina and all exhibits (May 2, 2014)
Deposition of Wilton Hildenbrand and all exhibits (May 15, 2014)

Academic Articles/Books/Research

ABA Section of Antitrust Law (2012), *Annual Review of Antitrust Law Developments*
ABA Section of Antitrust Law, *Antitrust Law Developments*, 7th, Vol. 1
Baker, J. and Bresnahan, T. (1992), "Empirical Methods of Identifying and Measuring Market Power," *Antitrust Law Journal*, Vol. 61
Bernheim, B. and Whinston, M. (2008), *Microeconomics*, Boston, MA: McGraw-Hill Irwin
Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley
Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill
Edlin, Aaron S. and Daniel L. Rubinfeld (2004), "Exclusion or Efficient Pricing? The 'Big Deal' Bundling of Academic Journals," *Antitrust Law Journal*, vol. 72
Hausman, Jerry A. and J. Gregory Sidak (2007), "Evaluating Market Power Using Competitive Benchmark Prices Rather than the Hirschman-Herfindahl Index," *Antitrust Law Journal*, vol. 74
Jones, Jonathan D. (1999), "Total Return Analysis," *U.S. Department of the Treasury, Risk Management Series*
Jones, T. and Smith, J. (1982), "An Historical Perspective of Net Present Value and Equivalent Annual Cost," *The Accounting Historian's Journal*, Vol. 9
Martin, S. (1993), *Advanced Industrial Economics*, Cambridge, MA: Blackwell
McAfee, R. P., Mialon, H., and Williams, M. (2004), "What is a Barrier to Entry?" *American Economic Review*, vol. 94

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D_DATA_FIOS_STATUS

D_DISCO_REASON

D_FIOS_FRANCHISE_STATUS

D_GEOG_CORP

D_GEOG_FTA_ATTR

D_MISC_COMBO_STR

D_NEW_OOL_TIER

D_OOL_OFFERS
D_OV_OFFERS
D_OV_PRODUCT_CLASS
D_OV_TIER
D_SALES_CANCEL_REASON
D_SALES_REASON
D_UVERSE
D_UVERSE_ZIPCODE_STATUS
D_VIDEO_OFFERS
D_VIDEO_TIER
D_WORKORDER_TYPE
DVR_REVENUE
F_HOMES_PASSED_DLY_CHC
IO_EQUIP_REVENUE
M_CODE36
M_EVTORDERS
M_EVTTITLE
M_HOUSEMASTER
M_SUMCODES
M_ZIPMASTER
NFOV_BOX_INVENTORY_HISTORY
NFOV_BOX_INVENTORY_HISTORY
NFOV_CUSTMASTER_HISTORY
NFOV_CUSTRATES_DETAIL
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NFOV_SVCS_MASTER
NFOV_WIPCUSTRATE_HISTORY
NFOV_WIPMASTER_PRCSSD

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Canadian Set-Top Box Prices

Canadian Prices

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APPENDIX III: COMPARISON OF STBs OFFERED FOR RENTAL BY CABLEVISION AND STBs FOR SALE IN CANADA

APPENDIX III: TABLE 1
STBs OFFERED FOR RENTAL BY CABLEVISION

STB Type	STB Model	Purchase Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
SD	Sony Primary	■	Total: N/A SDRAM: N/A DRAM: 16-32MB FLASH: 8MB Non-volatile memory: 128KB	N/A	N/A	MPEG-2 MP@ML	N/A
SD	Sony Secondary	■	Total: N/A SDRAM: N/A DRAM: 8MB FLASH: 4MB Non-volatile memory: 64-128KB	N/A	N/A	MPEG-2 MP@ML	N/A

APPENDIX III: TABLE 1 (CONT.)
STBs OFFERED FOR RENTAL BY CABLEVISION

STB Type	STB Model	Purchase Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
SD	Explorer 1800	■	Total: 16-40MB SDRAM: 12-36MB DRAM: N/A FLASH: 4MB Non-volatile memory: 2KB	166MHz, 32-bit RISC processor	N/A	MPEG-2 MP@ML	640x480
SD	Explorer 4200	■	Total: Over 44MB SDRAM: N/A DRAM: 36MB FLASH: 8MB Non-volatile memory: 4KB	Dual 164MHz, 32-bit RISC Processors	N/A	MPEG-2 MP@ML	640x480

APPENDIX III: TABLE 1 (CONT.)
STBs OFFERED FOR RENTAL BY CABLEVISION

STB Type	STB Model	Purchase Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
SD	Explorer 1850	■	Total: 36MB SDRAM: N/A DRAM: 32MB FLASH: 4MB Non-volatile memory: N/A	166 MHz, 32-bit RISC Processor	N/A	MPEG-2 MP@ML	640x480
SD	Explorer 4250	■	Total: Over 72MB SDRAM: N/A DRAM: 64MB FLASH: 8MB Non-volatile memory: 4KB	Dual 250MHz SPARC Processors	N/A	MPEG-2 MP@ML	640x480

APPENDIX III: TABLE 1 (CONT.)
STBs OFFERED FOR RENTAL BY CABLEVISION

STB Type	STB Model	Purchase Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD	Explorer 4200	■	Total: Over 56MB SDRAM: N/A DRAM: 48MB FLASH: 8MB Non-volatile memory: 4KB	Dual 164MHz, 32-bit RISC Processors	N/A	MPEG-2 MP@HL	640x480
HD	Explorer 4250	■	Total: Over 72MB SDRAM: N/A DRAM: 64MB FLASH: 8MB Non-volatile memory: 4KB	Dual 250MHz SPARC Processors	N/A	MPEG-2 MP@HL	640x480

APPENDIX III: TABLE 1 (CONT.)
STBs OFFERED FOR RENTAL BY CABLEVISION

STB Type	STB Model	Purchase Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD	Samsung SMT-C5320	■	Total: N/A SDRAM: N/A DRAM: 256MB FLASH: 64MB Non-volatile memory: N/A	N/A	N/A	MPEG-2 MPEG-4 (H.264)	N/A
SD_DVR	Explorer 8300	■	Total: Over 96MB SDRAM: N/A DRAM: 96MB FLASH: 512KB Non-volatile memory: 8KB	Dual 250MHz, 32-bit RISC Processors	80GB	MPEG-2 MP@ML	640x480

APPENDIX III: TABLE 1 (CONT.)
STBs OFFERED FOR RENTAL BY CABLEVISION

STB Type	STB Model	Purchase Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD_DVR	Explorer 8300		Total: Over 112MB SDRAM: N/A DRAM: 112-176MB FLASH: 512KB Non-volatile memory: 8KB	Dual 250MHz, 32-bit RISC Processors	80GB 160GB	MPEG-2 MP@ML, MP@HL	640x480

Note:

¹ [REDACTED]

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APPENDIX III: TABLE 2
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
SD	Explorer 3200	2001	Total: 24MB SDRAM: N/A DRAM: 20MB FLASH: 4MB Non-volatile memory: N/A	166MHz, 32-bit RISC Processor	N/A	MPEG-2 MP@ML	640x480
SD	Motorola DCT1800	2003	Total: N/A SDRAM: N/A DRAM: 16MB FLASH: 4MB Non-volatile memory: N/A	N/A	N/A	MPEG-2	N/A

APPENDIX III: TABLE 2 (CONT.)
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
SD	Motorola DCT2500	2003	Total: N/A SDRAM: 64MB DRAM: N/A FLASH: N/A Non-volatile memory: N/A	175 MHz	N/A	MPEG-2	N/A
SD	Explorer 940	2006	Total: 16-52MB SDRAM: 12-36MB DRAM: N/A FLASH: 4-16MB Non-volatile memory: N/A	166 MHz, RISC Processor	N/A	MPEG-2 MP@ML	720x480

APPENDIX III: TABLE 2 (CONT.)
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD	Motorola DCT6200	2003	Total: N/A SDRAM: N/A DRAM: 64-128MB FLASH: 16-32MB Non-volatile memory: N/A	N/A	N/A	MPEG-2	N/A
HD	Explorer 3250	2004	Total: Over 40MB SDRAM: N/A DRAM: 32-48MB FLASH: 8-16MB Non-volatile memory: 4KB	166MHz, 32-bit RISC Processor	N/A	MPEG-2 MP@HL	640x480

APPENDIX III: TABLE 2 (CONT.)
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD	Explorer 4250	2005	Total: Over 72MB SDRAM: N/A DRAM: 64MB FLASH: 8MB Non-volatile memory: 4KB	Dual 250MHz SPARC Processors	N/A	MPEG-2 MP@HL	640x480
HD	Motorola DCX3200	2008	Total: N/A SDRAM: N/A DRAM: 256MB FLASH: 64MB Non-volatile memory: N/A	N/A	N/A	MPEG-2 MP@HL MPEG-4 (H.264)	N/A

APPENDIX III: TABLE 2 (CONT.)
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD	Motorola DCX3200P2	2009	Total: N/A SDRAM: N/A DRAM: 256-512MB FLASH: 64MB Non-volatile memory: N/A	N/A	N/A	MPEG-2 MPEG-4 (H.264)	720x480 1920x1080
HD	Explorer 4642	2009	Total: N/A RAM: 128MB FLASH: 32MB Non-volatile memory: 16KB	700MHz	N/A	MPEG-2 MP@ML, MP@HL MPEG-4 (H.264)- HP@L4.0(HD)	960x540

APPENDIX III: TABLE 2 (CONT.)
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD	Motorola DCX700	2009	Total: N/A SDRAM: N/A DRAM: 256MB FLASH: 64MB Non-volatile memory: N/A	N/A	N/A	MPEG-2 MPEG-4 (H.264)	720x480 1920x1080
HD	Pace DC550D	2010	Total: N/A SDRAM: 256MB DRAM: N/A FLASH: 32MB Non-volatile memory: 256KB	N/A	N/A	MPEG-2 MP@ML, MP@HL MPEG-4 MP@ML, MP@HL	854x480 960x540

APPENDIX III: TABLE 2 (CONT.)
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD_DVR	Motorola DCT6412	2004	Total: N/A SDRAM: N/A DRAM: 128MB FLASH: 16-32MB Non-volatile memory: N/A	N/A	120GB	MPEG-2	N/A
HD_DVR	Motorola DCT6416	2004	Total: N/A SDRAM: N/A DRAM: 128MB FLASH: 16-32MB Non-volatile memory: N/A	N/A	160GB	N/A	N/A

APPENDIX III: TABLE 2 (CONT.)
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD_DVR	Explorer 8300	2004	Total: Over 112MB SDRAM: N/A DRAM: 112-176MB FLASH: 512KB Non-volatile memory: 8KB	Dual 250MHz, 32-bit RISC Processors	80GB 160GB	MPEG-2 MP@ML, MP@HL	640x480
HD_DVR	Motorola DCX3400	2008	Total: N/A SDRAM: N/A DRAM: 256MB FLASH: 32MB Non-volatile memory: N/A	N/A	160GB 250GB	MPEG-2 MPEG-4 (H.264)	720x480 1920x1080

APPENDIX III: TABLE 2 (CONT.)
STBs FOR SALE IN CANADA

STB Type	STB Model	Release Year ¹	Memory	CPU	Hard Drive (for only DVR STBs)	Video Decompression	Graphics
HD_DVR	Explorer 8642	2009	Total: N/A RAM: 384-512MB FLASH: 2MB Non-volatile memory: 16KB Total: N/A	700MHz	160GB 320GB 500GB	MPEG-2 MP@HL MPEG-4 (H.264)- HP@L4.0(HD)	960x540
HD_DVR	Motorola DCX3510	2011	SDRAM: N/A DRAM: 512MB FLASH: 64MB Non-volatile memory: N/A	N/A	500GB	MPEG-2 MPEG-4 (H.264)	N/A

Note:

¹ The release year is based on the earliest year referenced in the STB model official user guides and manuals.

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http://media.cox.com/support/print_media/tv/equipment/user_guides/cable_box/DCX3200HD_Phase2_user_guide.pdf;
http://media2.comcast.net/anon.comcastonline2/support/help/faqs/settopboxes/DCX3200_Install_Guide.pdf;
<http://media2.comcast.net/anon.comcastonline2/support/help/faqs/settopboxes/motodcx3200minstall.pdf>;
<http://www.adamscableequipment.com/uploads/2/6/7/4/2674188/dct2500.pdf>;
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http://www.andycable.com/Data_Sheet_DCX_3400.pdf; http://www.andycable.com/DCX700_DS.pdf;
http://www.cisco.com/c/dam/en/us/products/collateral/video/series-3000-digital-cable-set-tops/product_data_sheet0900aecd806c5b93.pdf;

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<https://web.archive.org/web/20101218031400/http://www.pace.com/americas/products-capabilities/products/dc550d/>;
<https://www.pace.com/documents/manuals/eng-m-dc550d-504-3340700-qsg.pdf>.

APPENDIX IV: MINIMUM AND MAXIMUM CABLEVISION MARKET SHARES AND HHI STATISTICS

1. This appendix reports TWS and digital video subscriber shares and HHI statistics using the minimum and maximum number of subscribers reported by Cablevision in the firm's business documents. In a given year, Cablevision's minimum market share is calculated by taking (1) the smallest number of Cablevision subscribers; (2) the largest number of DBS subscribers; (3) the largest number of FiOS subscribers; and (4) the largest number of U-verse subscribers. These minimum Cablevision market shares are reported in Appendix IV, Table 1 and Table 3 for TWS and digital video, respectively. Conversely, in a given year, Cablevision's maximum market share is calculated by taking (1) the largest number of Cablevision subscribers; (2) the smallest number of DBS subscribers; (3) the smallest number of FiOS subscribers; and (4) the smallest number of U-verse subscribers. These maximum Cablevision market shares are reported in Appendix IV, Table 2 and Table 4 for TWS and digital video, respectively.

APPENDIX IV: TABLE 1
TWO WAY SERVICES SUBSCRIBER MARKET SHARES AND HHI STATISTICS (MIN)



APPENDIX IV: TABLE 2
TWO WAY SERVICES SUBSCRIBER MARKET SHARES AND HHI STATISTICS (MAX)



APPENDIX IV: TABLE 3
DIGITAL VIDEO SUBSCRIBER MARKET SHARES AND HHI STATISTICS (MIN)

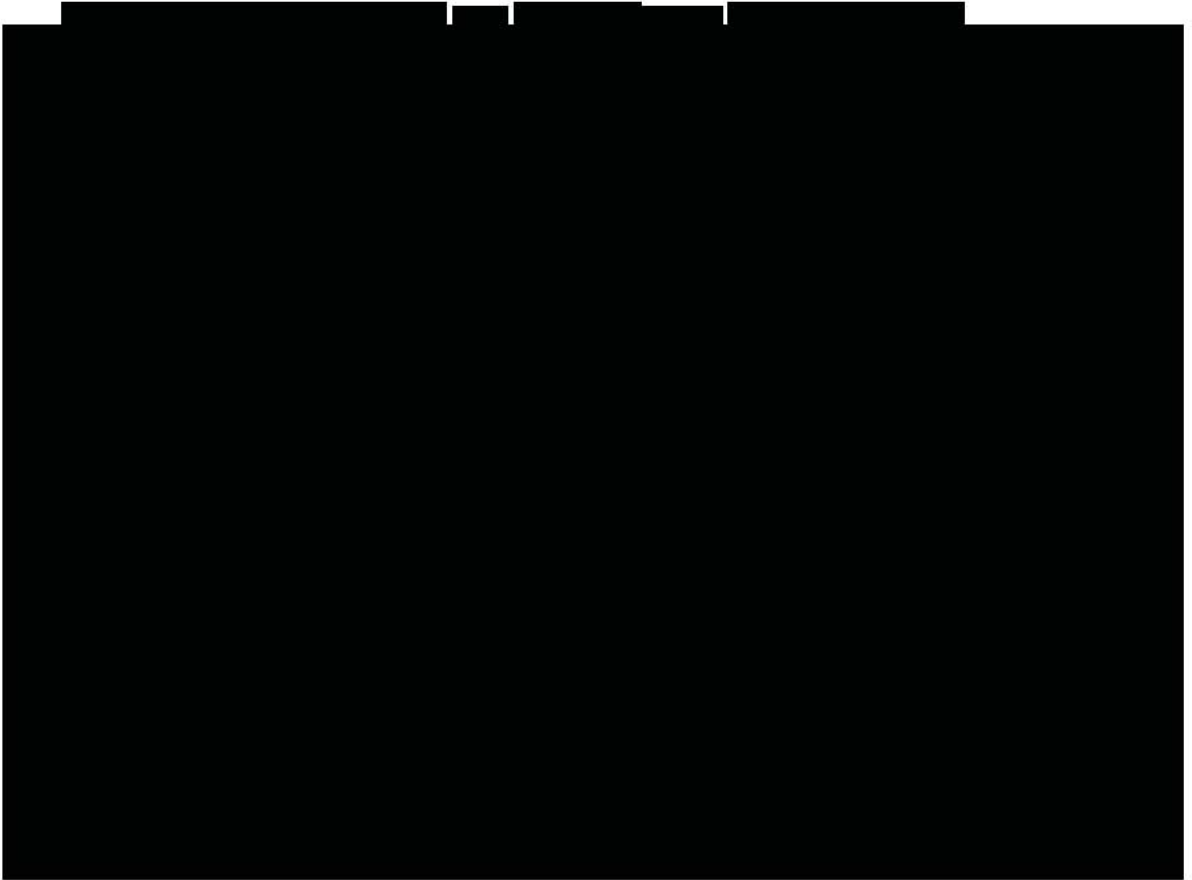


APPENDIX IV: TABLE 4
DIGITAL VIDEO SUBSCRIBER MARKET SHARES AND HHI STATISTICS (MAX)

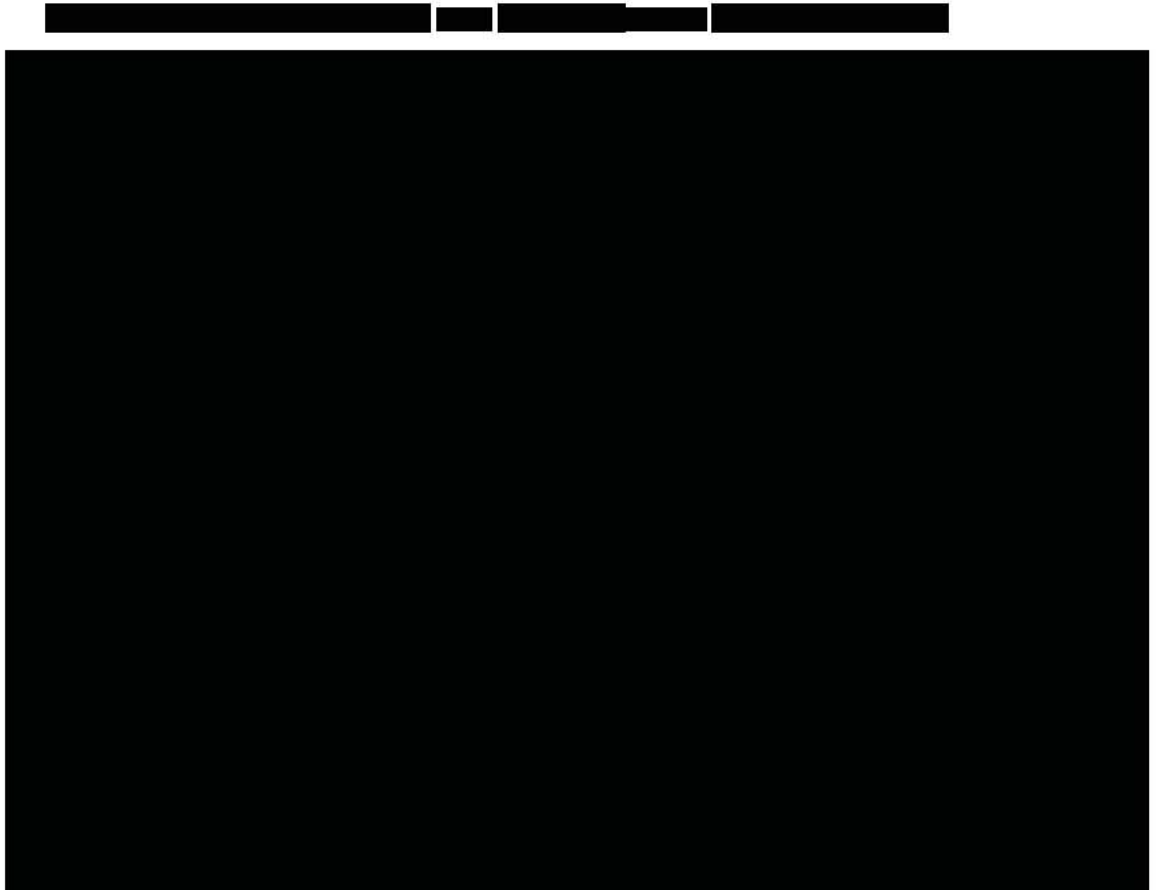


[REDACTED]

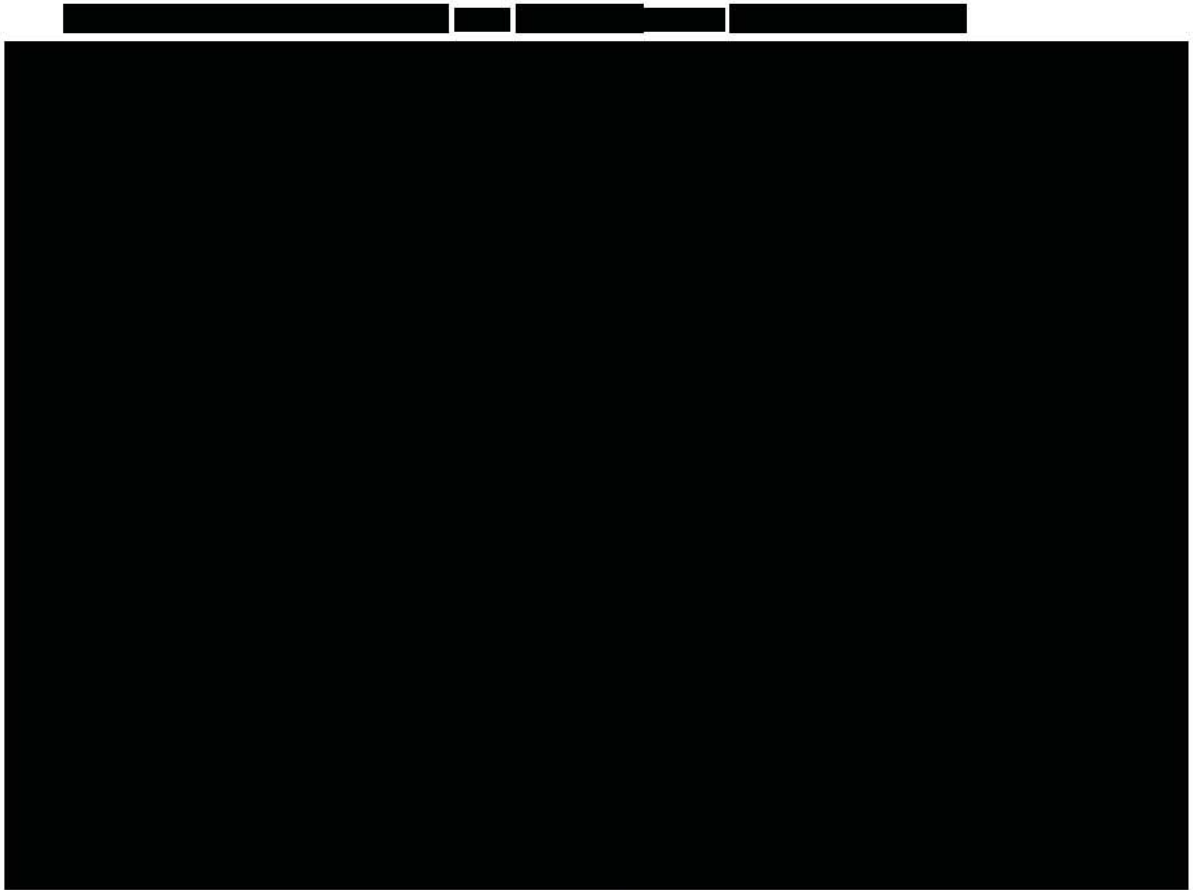
CABLEVISION'S TRI-STATE FOOTPRINT



CABLEVISION'S TRI-STATE FOOTPRINT



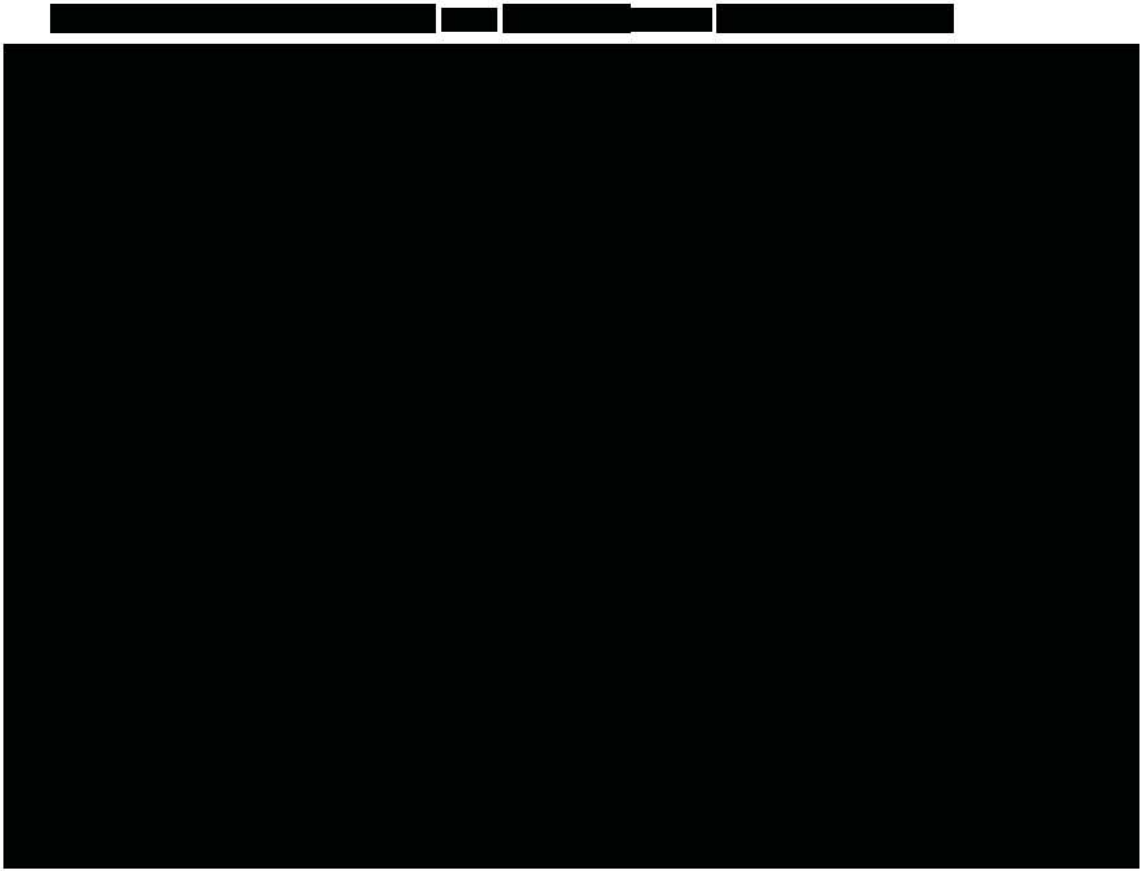
CABLEVISION'S TRI-STATE FOOTPRINT



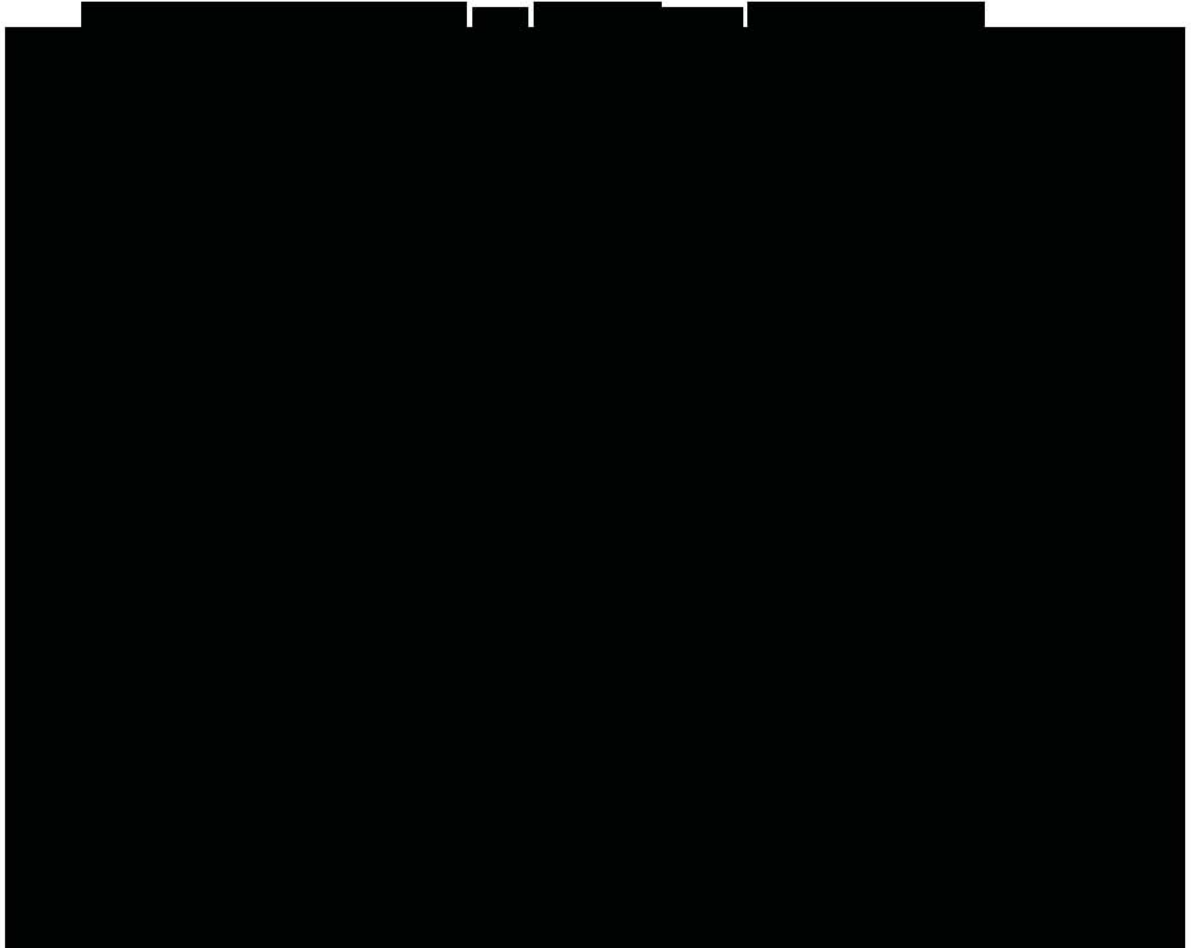
CABLEVISION'S TRI-STATE FOOTPRINT



CABLEVISION'S TRI-STATE FOOTPRINT



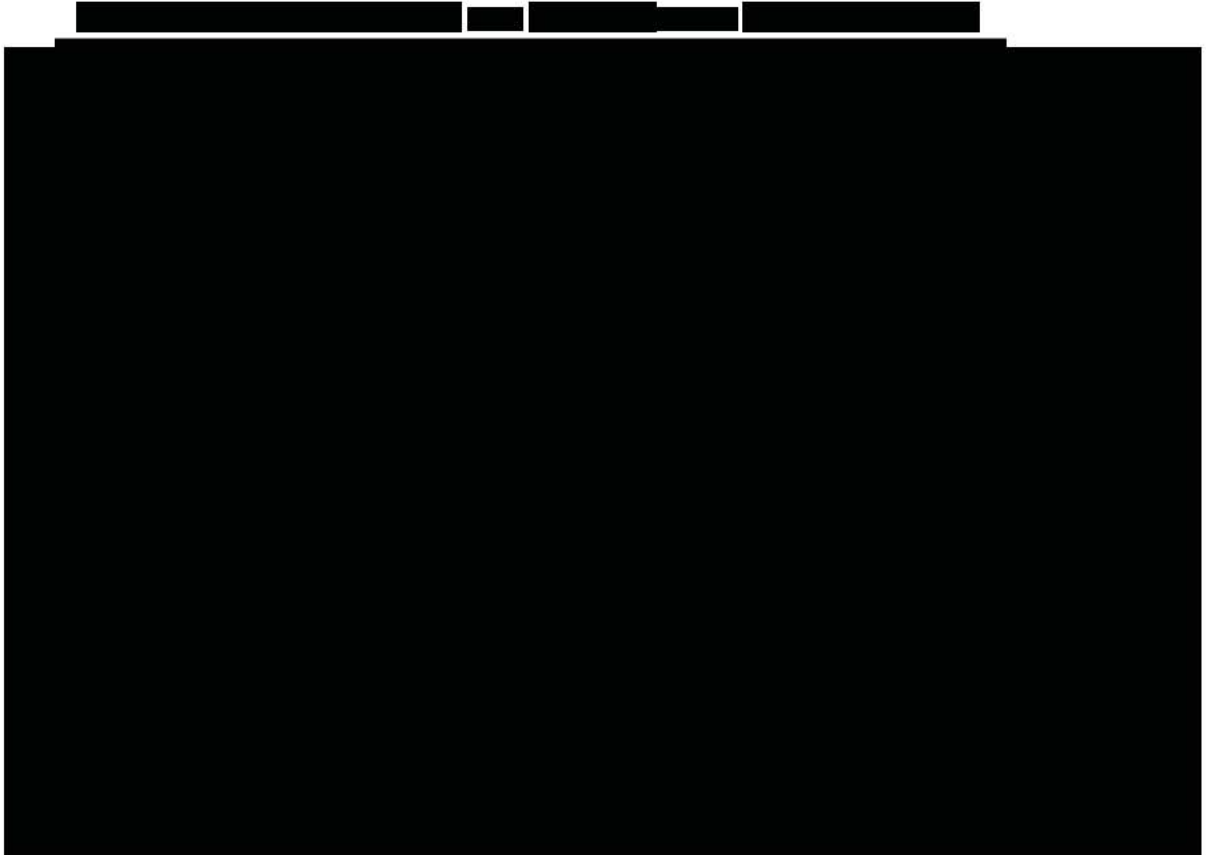
CABLEVISION'S TRI-STATE FOOTPRINT



CABLEVISION'S TRI-STATE FOOTPRINT



CABLEVISION'S TRI-STATE FOOTPRINT



CABLEVISION'S TRI-STATE FOOTPRINT



CABLEVISION'S TRI-STATE FOOTPRINT



UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

GARY MARCHESE, ET AL.,)	
)	
Plaintiffs,)	
)	
v.)	Case No. 10-2190-KM-MAH
)	
CABLEVISION SYSTEMS)	
CORPORATION, ET AL.,)	
)	
Defendants.)	
_____)	

Expert Rebuttal Report of Professor Justine S. Hastings, Ph.D.

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
I.A.	<i>Qualifications</i>	1
I.B.	<i>Assignment</i>	2
I.C.	<i>Summary of conclusions from my prior report</i>	2
I.D.	<i>Summary of conclusions</i>	3
II.	REBUTTAL TO DR. STIROH’S COMMENTS ON THE NATURE OF THE PRODUCTS AND INDUSTRY	9
II.A.	<i>Rebuttal to Dr. Stiroh’s comments on Cablevision’s video services</i>	9
II.B.	<i>Rebuttal to Dr. Stiroh’s comments on competition to Cablevision’s video and STB services</i>	16
II.C.	<i>Rebuttal to Dr. Stiroh’s comments on Cablevision’s video services business model</i>	17
III.	REBUTTAL TO DR. STIROH’S COMMENTS ON “SUMMARY OF THE HASTINGS REPORT AND ITS FLAWS”	20
IV.	REBUTTAL TO DR. STIROH’S COMMENTS ON MY ECONOMIC ANALYSIS OF TYING CLAIMS.....	21
IV.A.	<i>Rebuttal to Dr. Stiroh’s claim that my report does not specify the alleged tie and the but-for world</i>	21
IV.B.	<i>Rebuttal to Dr. Stiroh’s claim that I ignore alleged efficiencies of tying</i>	23
IV.C.	<i>Rebuttal to Dr. Stiroh’s “reoptimization” claim</i>	27
IV.D.	<i>Rebuttal to Dr. Stiroh’s claim regarding “reoptimization” and alleged lost efficiencies in the but-for world</i>	30
V.	REBUTTAL TO DR. STIROH’S CLAIM THAT IMPACT CANNOT BE PROVEN USING COMMON METHODOLOGIES AND COMMON EVIDENCE	33
V.A.	<i>Rebuttal to Dr. Stiroh’s claim that I allegedly fail to specify the but-for world</i>	33
V.B.	<i>Rebuttal to Dr. Stiroh’s claim that Cablevision’s “reoptimization” in the but-for world precludes class-wide proof of impact</i>	37
V.C.	<i>Rebuttal to Dr. Stiroh’s claim that individualized issues preclude proof of common impact even considering only STB rental rates</i>	46
VI.	REBUTTAL TO DR. STIROH’S CLAIM THAT CAUSATION CANNOT BE PROVEN USING COMMON METHODOLOGIES AND COMMON EVIDENCE	48

VI.A. <i>Rebuttal to Dr. Stiroh’s claim that the tie did not cause subscribers to rent STBs from Cablevision</i>	48
VI.B. <i>Rebuttal to Dr. Stiroh’s claim that causation cannot be proven using common evidence</i>	50
VII. REBUTTAL TO DR. STIROH’S CLAIM THAT MARKET POWER CANNOT BE PROVEN USING COMMON METHODOLOGIES AND COMMON EVIDENCE	52
VII.A. <i>Rebuttal to Dr. Stiroh’s alleged multiple geographic tying markets</i>	52
VII.B. <i>Rebuttal to Dr. Stiroh’s claim that my report presents a flawed approach to defining the tying product market</i>	59
VII.C. <i>Rebuttal to Dr. Stiroh’s claims regarding the direct evidence of Cablevision’s market power tying market</i>	60
VII.D. <i>Rebuttal to Dr. Stiroh’s claim that my report presents a flawed approach to defining the tied product market</i>	62
VIII. REBUTTAL TO DR. STIROH’S CLAIM THAT DAMAGES CANNOT BE SHOWN WITH METHODOLOGIES AND EVIDENCE COMMON TO THE CLASS	69
VIII.A. <i>Rebuttal to Dr. Stiroh’s overview of my damages analysis</i>	72
VIII.B. <i>Rebuttal to Dr. Stiroh’s claim that my damages analysis cannot establish class-wide damages even ignoring her “reoptimization” argument</i>	73
VIII.C. <i>Rebuttal to Dr. Stiroh’s claim that my damages model is unreliable for additional reasons</i> .	76
APPENDIX I: DOCUMENTS CONSIDERED	81

I. INTRODUCTION

I.A. *Qualifications*

1. My name is Justine S. Hastings. I am an Associate Professor of Economics with Tenure at Brown University. Prior to my position at Brown, I was an Associate Professor at Yale University and an Assistant Professor at Dartmouth College. I earned a doctorate degree in Economics from the University of California at Berkeley in 2001, and earned a Master of Science in Agricultural and Resource Economics, as well as a Bachelor's Degree in Economics, during my four years as an undergraduate at the University of California at Davis. I am a Faculty Research Fellow at the National Bureau of Economic Research ("NBER"), affiliated with the NBER research programs in Industrial Organization, Public Economics, Environmental and Energy Economics, Education Economics, and Economics of Aging.

2. My research spans Industrial Organization (competition, marketing, and firm behavior) and Public Economics (regulation, consumer behavior, and policy design). In my research, I examine the interactions between consumer behavior and firm strategy to draw lessons for regulation and public policy. I have published papers in leading scholarly journals including the *Quarterly Journal of Economics*, the *American Economic Review*, the *American Economic Journal*, *Journal of Public Economics*, and the *International Journal of Industrial Organization*.

3. I currently serve on the Academic Research Council ("ARC") for the United States Federal Consumer Financial Protection Bureau ("CFPB"). The ARC members were selected for their research expertise in consumer personal finance markets, industry structure, and regulation to provide guidance and input on the design of CFPB regulations. I also serve on the Council of Economic Advisors for the Governor of Rhode Island. Council members' tasks include advising the governor, the executive office of commerce, and the state on economic policy. I have provided

expert testimony before the U.S. Senate, Committee on the Judiciary, Subcommittee on Antitrust, Competition, and Consumer Rights and before the California State Assembly, Select Committee on Gasoline Competition, Marketing, and Pricing. I have testified in New Hampshire State Court and the United States District Court for the Western District of Oklahoma. I have provided declarations in *In re Cox Enterprises, Inc. Set-Top Cable Television Box Antitrust Litig.*, 12-MDL-2048-C (W.D. Okla.) (class certified).

4. I previously submitted an expert report in the present matter dated August 15, 2014 (“Hastings Report”). I am being compensated at the billing rate of \$675 per hour, and my compensation is not dependent on the outcome of this litigation. My work on this matter is ongoing, and I reserve the right to supplement and modify my report as additional information and data become available.

I.B. *Assignment*

5. I have been asked by counsel for Plaintiffs to reply to the expert reports of Lauren J. Stiroh, Ph.D.¹ and Dr. Gerry W. Wall, Ph.D.² filed on behalf of Cablevision in response to my prior report. Appendix I contains a list of the documents considered in preparing this rebuttal report.

I.C. *Summary of conclusions from my prior report*

6. My primary conclusions as set forth in my prior report are summarized as follows:

Cablevision’s Market Power in the Tying Market

Market Definition

- Plaintiffs are capable of proving, based on common evidence, that the relevant tying product consists of two-way services (“TWS”), which as a commercial reality, customers purchase in effect only with a digital programming package in the market


¹ Hereinafter “Stiroh Report.”

² Hereinafter “Wall Report.”

for digital video services. TWS give customers the capability of two-way communication features valued for allowing convenient entertainment enjoyment via remote within the home. TWS include IPG, VOD, the ability to order PPV events using a remote control, and iO Games, which are not available with a CableCARD. These TWS are interactive services that are a critical component of the digital video services to which consumers subscribe, and which Cablevision requires the rental of an STB to utilize.

- Plaintiffs are capable of proving, based on common evidence, that the relevant tied-product market is an STB required for TWS.
- Plaintiffs are capable of proving, based on common evidence, that the relevant geographic market for both the tying and tied products is Cablevision's Tri-State Footprint, that is the area in which it has franchise agreements to provide cable service within the states of Connecticut, New York, and New Jersey.

Market Power: Market Structure and Supporting Evidence

- 
- Plaintiffs are capable of proving, based on common evidence, that there are significant barriers to entry in the relevant tying market.
- Plaintiffs are capable of proving, based on common evidence, that Cablevision has market power in the tying market.

Antitrust Injury and Damages

- Plaintiffs are capable of proving, based on common evidence, that all or virtually all members of the proposed Class have suffered common antitrust injury by paying supra-competitive prices for STBs as a result of Defendant's tying conduct.
- Plaintiffs are capable of calculating, based on a common methodology and common evidence, the extent of the overcharges incurred by the Class in the aggregate.

I.D. *Summary of conclusions*

7. The voluminous, nearly 400-page report filed by Dr. Stiroh does not alter the fact that the three basic questions to be answered in the present case are straightforward: (1) Are the economic issues associated with liability in this matter capable of proof through evidence common to the class? (2) Does there exist a common methodology based on common evidence to determine

if all or virtually all Class members suffered antitrust injury? (3) Does there exist a common methodology based on common evidence that can be used reliably to quantify class-wide damages?

8. Regarding liability, my report follows a well-accepted methodology with which to evaluate the economic validity of a tying claim. In particular, four elements must be established using accepted economic methodologies.³ First, two separate products or services must be involved in the tie. Second, the sale of one product or service (the “tying” product or service) must be conditioned upon the purchase of a second product or service (the “tied” product or service). Third, the tie must affect a substantial amount of interstate commerce in the tied-product market. Fourth, the seller must have market power in the tying market.⁴ These elements can be established using well-accepted, common economic methodologies and common evidence. None of the economic analysis of liability issues presented in my report depend on the individual characteristics of a proposed Class member. In particular, common economic evidence and methods are used to establish that the seller (1) tied two distinct products and (2) possesses market power in the tying product market. The methods and data used are common to the class and based on well-established economics.

9. Regarding antitrust injury, the question becomes: Would the disputed conduct identified by the Plaintiffs result in all or virtually all members of the Class suffering antitrust injury? In this case, the answer is clear—in the presence of Cablevision’s conduct, i.e., tying the sale of its TWS to the sale of its STBs, the Class would be commonly affected because all or

³ ABA Section of Antitrust Law (2012), *Annual Review of Antitrust Law Developments*, pp. 30-32.

⁴ “In order to make out a § 1 *per se* tying claim, a plaintiff must appropriately allege facts indicating: (1) a defendant seller tied two distinct products, conditioning sale of one product on the purchase of a different tied product; (2) the seller possesses market power in the tying product market; and (3) a substantial amount of interstate commerce is affected.” *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *2 (D.N.J. January 9, 2012).

virtually all Class members would be adversely affected by the supra-competitive prices they pay for STBs. The well-accepted methodologies described in the Hastings Report demonstrate that all or virtually all Class members suffered antitrust injury. I use the well-accepted Net Present Value (“NPV”) methodology to analyze whether all or virtually all members of the Class suffered antitrust injury as a result of Cablevision’s conduct. I compare STB rental rates in the actual world with competitive prices in the but-for world calculated using the NPV methodology. The harm caused by Cablevision’s alleged conduct is common because the conduct adversely affected all or virtually all members of the Class. Therefore, the existence of Class members’ injury is an issue common to the Class and subject to generalized proof based on basic economic theory and empirical evidence.

10. Given the existence of antitrust injury, the question becomes: Do there exist common, well-accepted methodologies and common evidence that can be used reliably to estimate classwide damages? From an economic perspective, antitrust damages equal the total number of STBs rented by Class members multiplied by the difference between: (1) the price Class members paid to rent STBs in the actual world and (2) the competitive price that would have prevailed in the market but for Cablevision’s tie. I use the well-accepted NPV methodology to estimate classwide damages based on the well-established economic principles of competition and opportunity costs. I do this for four specific types of STBs: SD, HD, SD/DVR, and HD/DVR. The economic evidence used in applying the NPV methodology is common to the class.⁵

11. In sum, common, well-accepted methodologies and common economic evidence can be used reliably to ascertain whether Cablevision’s conduct caused antitrust injury and

⁵ This same methodology can be used to calculate unjust enrichment damages and can be done on a state-by-state basis if necessary.

damages to all or virtually all Class members. The common and reliable methodologies described in the Hastings Report demonstrate that Cablevision's conduct caused antitrust injury and damages to all or virtually all Class members.

12. Dr. Stiroh's main points are made repeatedly throughout her nearly 400-page report. However, they can be succinctly organized, summarized, and rebutted. Her report reduces to five main criticisms and arguments against my report. Each one is clearly incorrect:

- First, Dr. Stiroh asserts that class members have rented STBs from Cablevision for reasons unrelated to the use of Cablevision's two-way services, and this implies that TWS and STBs are not tying and tied products from an antitrust perspective.⁶ Her point is: "As a simple matter of logic, it is flawed to assume (as Dr. Hastings does) that if the use of one product (e.g., the bundle of interactive services that Dr. Hastings asserts forms a relevant product) requires the use of an asserted second product (e.g., an STB from Cablevision), then the second product is only used with the first."⁷

Dr. Stiroh has the logic wrong. The logical claim in a tying case is that, in order to access the tying product, the customer must purchase the tied product. Dr. Stiroh's point that the tied product may be used for purposes other than accessing the tying product is irrelevant in terms analyzing a tying claim.


- Second, Dr. Stiroh claims that Cablevision subscribers have alternatives that are reasonably interchangeable with its STBs for the purposes of accessing TWS. She asserts: "Cablevision's subscribers can also access certain of Cablevision's video services through other equipment [i.e., other than a Cablevision STB]."⁸ Her suggested alternatives include CableCARDS and TiVo devices. She also suggests that Cablevision's own Optimum App is an alternative to the firm's STBs.

These arguments misstate the facts. First, neither CableCARDS nor TiVo and similar devices can access Cablevision's two-way services. Importantly, Dr. Stiroh's claims ignore hard data facts.

⁶ Stiroh Report, ¶ 287. See also, Stiroh Report ¶¶ 110, 126, 166, 244-246, 282-285, 289-297, 303, 307-312, and 314.

⁷ Stiroh Report, ¶ 287.

⁸ Stiroh Report, ¶ 18. See also, Stiroh Report ¶¶ 34-41, 80, 100, 286, and 305-307.

- 
- Third, Dr. Stiroh claims that I do not identify a but-for-competitive price because I do not predict numerous, yet unnecessary, features of the but-for competitive world. Dr. Stiroh claims that an economist must predict firms' and each consumer's decisions to the finest detail including but not limited to: What "video packages would Cablevision offer to consumers"?⁹ What "would Cablevision's prices be for the various video packages and other equipment"?¹⁰ Which "video packages and services would the subscriber select"?¹¹ Which specific STB model would each subscriber select and would they lease, lease-to-own, or purchase the STB?¹² How long would each subscriber keep a specific STB?¹³ "How and to what degree is the subscriber affected by other changes in the but-for world, such as a change in the quality of Cablevision's video services offerings and/or STBs?"¹⁴

Dr. Stiroh is fundamentally confused about what needs to be shown in a but-for world. Not only are such counterfactual predictions not required from an antitrust economics perspective, they are not done in research papers at the cutting edge of the profession as published in top academic journals. While Dr. Stiroh has limited experience with publishing peer-reviewed academic research, I publish in and serve as an editor for top journals. There are limits to what can be computed counterfactually that even the most innovative, ambitious, and potentially controversial new research methodologies cannot push beyond. She requires the econometrician to predict (1) uncountable strategies and circumstances in the but-for world; (2) decisions in each of these circumstances for customers and firms over long periods of time; and (3) yet unknown technological and product distribution developments. She requires impossible and unnecessary predictions for establishing a but-for competitive price, and she ignores the fact that but-for prices calculated with tractable and reasonable methodologies are routinely presented and accepted in antitrust matters.¹⁵ The Hastings Report uses

⁹ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 8, 100, 150-158, 258-270, 361, and 420-424.

¹⁰ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 8, 193-196, 198-199, 212, 215, 218, 220-223, 227-237, 239, 267, 271-276, and 420-424, 434-443, 458-459, 463-469, 471-476.

¹¹ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 8, 212, 215, 225-227, 239, 258-270, and 422.

¹² Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 166, 220, 224-225, 240-246, 248-251, 267, 277-281, 458-462, 475, and 493.

¹³ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 112, 240-243, 458, 460-463, and 496-498.

¹⁴ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 169, 197, 201-203, 215, 220, 239, 253-257, 267, 273, 381, 467, and 469.

¹⁵ See, e.g., *In re: Cox Enterprises, Inc., Set-Top Cable Television Box Antitrust Litigation*, Memorandum Opinion and Order, pp. 22-23 (January 9, 2014).

tractable, reasonable, reliable, and well-accepted economic methodologies for this purpose. The but-for price is the competitive price that would prevail in the absence of anticompetitive conduct. It is constructed based on fundamental economic principles.

-

Dr. Stiroh's claim is rejected by both empirical evidence and economic theory.

. These empirical facts are consistent with the basic fact that the tying and tied product markets are separate. Dr. Stiroh has offered no empirical evidence to support her claims.

- Finally, Dr. Stiroh argues that a retail market for STBs would not have developed in the but-for world.

¹⁷

Dr. Stiroh's argument is contradicted by the fact that both retail and resale markets for STBs exist in Canada,¹⁸ and the fact that robust retail and resale markets exist for

¹⁶ Stiroh Report, ¶ 171. See also, Stiroh Report, ¶¶ 150, 165, 193-199, 220-221, 223, 227, and 420-424.

¹⁷ Stiroh Report, ¶ 273, footnote 614. See also Stiroh Report, ¶¶ 145, and 238-239.

¹⁸ For retail markets in Canada, see Hastings Report, ¶¶ 33-34 and Figures 6, 8, and 10. For resale markets in Canada, see, e.g., sales of refurbished STBs by Shaw Communications (July 1, 2007), "Hardware," available at <http://web.archive.org/web/20070701113033/http://www.shaw.ca/en-ca/ProductsServices/Television/Digital/Hardware.htm>; Shaw Communications (April 5, 2008), "Hardware," available at <http://web.archive.org/web/20080405202013/http://www.shaw.ca/en-ca/ProductsServices/Television/Digital/Hardware.htm>; Shaw Communications (January 6, 2009), "Hardware," available at <http://web.archive.org/web/20090106070026/http://www.shaw.ca/en->

essentially every item of consumer electronics, such as desktop computers, laptops, videogame consoles, DVD players, Blue Ray players, television sets, wireless routers, etc. This includes devices that consumers are able to purchase at retail or resale and use in conjunction with services provided on an ongoing basis by MVPD providers (among others), such as cable modems, cellphones, OVD-access devices (Apple TV, Roku, Boxee, Amazon Fire TV, LG Blu-Ray, Google Chromecast), and DVRs, such as TiVo.

13. In addition to addressing each instance in which she raises these five points throughout her report, I also address minor points, misstatements, and misleading claims and arguments that appear in her report. I address each of her points roughly in the order in which they appear in her report, to provide a detailed rebuttal to each claim. Almost all of these points fall into the five main points summarized and rebutted above.

II. REBUTTAL TO DR. STIROH'S COMMENTS ON THE NATURE OF THE PRODUCTS AND INDUSTRY

II.A. *Rebuttal to Dr. Stiroh's comments on Cablevision's video services*

14. The first set of criticisms offered by Dr. Stiroh relate to her claim that Cablevision's subscribers have alternatives to its STBs for accessing the firm's video services.¹⁹ She claims that Cablevision subscribers can access certain video services through other equipment and hence various video services are not tied to STBs as these other types of equipment are viable and easy substitutes for STBs. These alternatives are in effect viewed as reasonably interchangeable with STBs for enjoying TWS.

15. Dr. Stiroh's first alternative is the use of a CableCARD. Dr. Stiroh claims: "subscribers may access Cablevision's linear programming through devices equipped with a

ca/ProductsServices/Television/Digital/Hardware.htm; and Shaw Communications (March 29, 2013), "TV – Equipment," available at <http://web.archive.org/web/20130329045625/http://www.shaw.ca/television/equipment/>; see also Canadian consumer retail websites, such as Kajiji, see Deposition of Gerald Wall, Ph.D. (November 4, 2014), Deposition Exhibits 4–6.

¹⁹ Stiroh Report, ¶ 18. See also, Stiroh Report ¶¶ 34-41, 80, 100, 286, and 305-307.

CableCARD, hardware that can be inserted into devices other than traditional MVPD STBs, such as TiVos and Smart TVs to decrypt cable providers' programming."²⁰ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Furthermore, CableCARDS are incapable of accessing Cablevision's TWS.

16. Dr. Stiroh's second alternative is to use a quadrature amplitude modulation ("QAM") tuner. However, these tuners "can be used to receive digital channels in Broadcast Basic only" and do not enable users to access Cablevision's IPG.²¹

17. Dr. Stiroh's third and final alternative is to use Cablevision's Optimum App, which allows a subscriber to view television programming via the Internet or on a mobile device.²² The Optimum App, available as a free download, allows Cablevision customers to "watch live TV anywhere in your home on any device—laptop, iPad, iPhone & iPod touch, Kindle Fire and select Android smartphones."²³ The Optimum App allows subscribers to control their Cablevision STB using the application's remote control functionality.²⁴ Subscribers with only a CableCARD,

²⁰ Stiroh Report, ¶ 18 (footnote omitted).

²¹ See, e.g., CVC-Marchese-00211963-65, at 65. ("QAM tuners can be used to receive digital channels in Broadcast Basic only and will receive some services on non-standard channels. Certain services are not available without a digital cable box. A digital cable box . . . is required . . . to receive interactive services.")

²² See also, Stiroh Report, ¶ 311. Cablevision introduced its Optimum App on April 2, 2011. See Kramer, S., "Updated: Cablevision Launches Optimum for iPad: 300 Channels and VOD," *Gigaom* (April 2, 2011), available at <https://gigaom.com/2011/04/02/419-cablevision-launches-optimum-for-ipad-300-channels-and-vod/> (accessed November 13, 2014). See also, Wolfe, B., "Cablevision Launches Streaming App For iPad; Legal Fight Likely," *AppAdvice* (April 2, 2011), available at <http://appadvice.com/appnn/2011/04/cablevision-joins-battle-networks-release-optimum-ipad-app> (accessed November 13, 2014).

²³ CSC Holdings, LLC, "Optimum TV – Better Television," available at <http://www.optimum.com/digital-cable-tv/cable-tv-app/> (accessed November 10, 2014).

²⁴ CSC Holdings, LLC, "Optimum App on Laptop," available at http://optimum.custhelp.com/app/answers/detail/a_id/2838/kw/optimum%20app (accessed November 10, 2014); CSC Holdings, LLC, "Optimum App for iPhone/iPod touch," available at http://optimum.custhelp.com/app/answers/detail/a_id/2754/kw/optimum%20app (accessed November 10, 2014); CSC Holdings, LLC, "Optimum App for iPad," available at

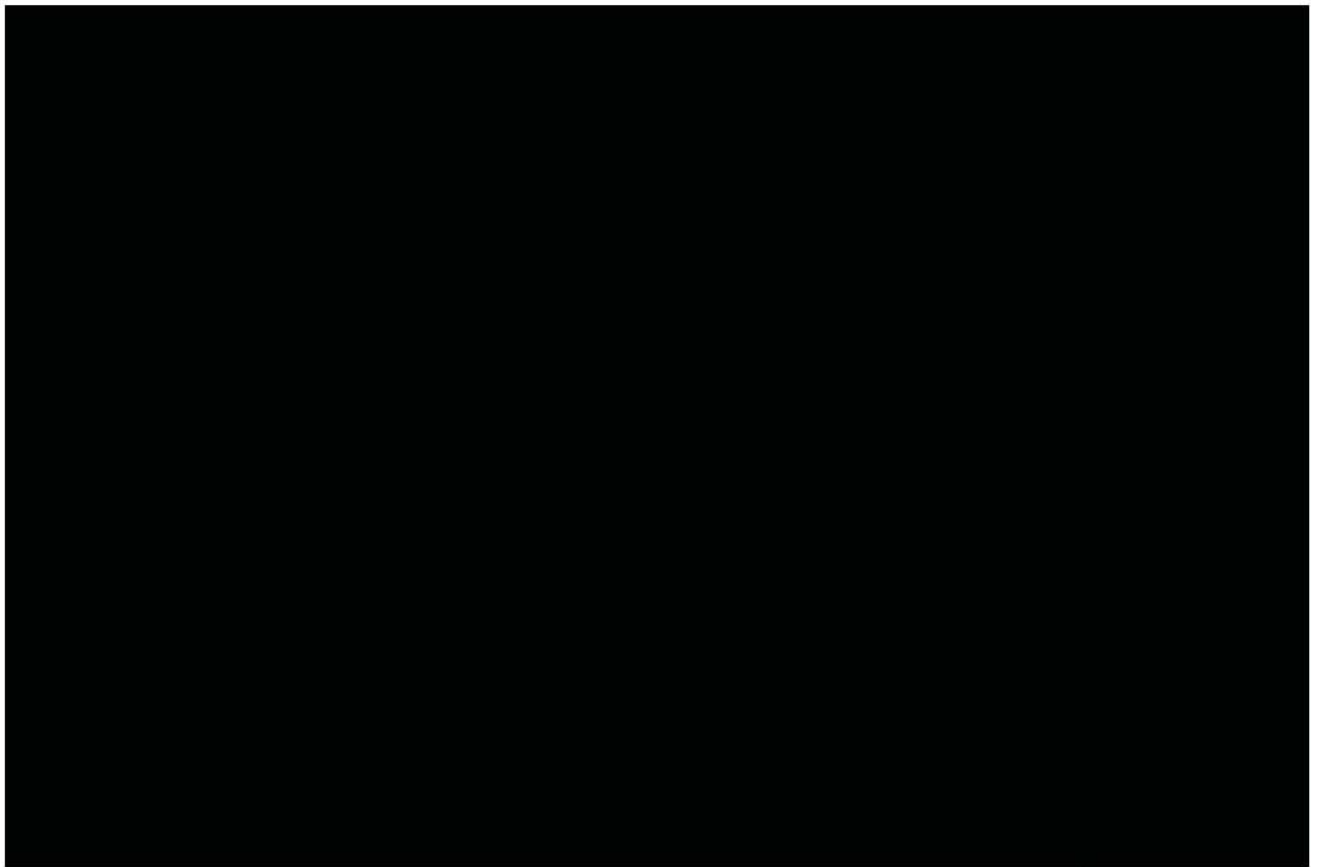
however, are limited in their TWS options and do not have the capability of using their devices as remote controls via the Optimum App.²⁵ [REDACTED]

[REDACTED]

[REDACTED]

http://optimum.custhelp.com/app/answers/detail/a_id/2694/kw/optimum%20app (accessed November 10, 2014); CSC Holdings, LLC, "Optimum App for Android or Kindle Fire," available at http://optimum.custhelp.com/app/answers/detail/a_id/2889/kw/optimum%20app (accessed November 10, 2014).

²⁵ See CSC, "Optimum App Terms of Use," available at <https://www.optimum.net/pages/Terms/Optimum-App.html> (accessed November 10, 2014) ("On Demand and remote control functionality requires a digital set top box.") See also, CSC Holdings, LLC, "Optimum App for iPhone/iPod touch," available at http://optimum.custhelp.com/app/answers/detail/a_id/2754/kw/optimum%20app (accessed November 10, 2014); CSC Holdings, LLC, "Optimum App for iPad," available at http://optimum.custhelp.com/app/answers/detail/a_id/2694/kw/optimum%20app (accessed November 10, 2014); CSC Holdings, LLC, "Optimum App for Android or Kindle Fire," available at http://optimum.custhelp.com/app/answers/detail/a_id/2889/kw/optimum%20app (accessed November 10, 2014).



Sources: Cablevision database: NFOV_CUSTRATES_HISTORY, NFOV_CUSTRATES_DETAIL; CVC-Marchese-00403729.xls; CVC-Marchese-00403730.xls.

18. For these reasons, Cablevision’s Optimum App and its STBs are complements—not substitutes. Finally, note that any competitive issues relating to Dr. Stiroh’s alleged alternatives are properly analyzed with class-wide economic evidence.

19. Next, Dr. Stiroh argues that TWS are not tied to STBs because individuals rent STBs to access one-way video services: “Another key reason why customers subscribe to Cablevision’s video services and lease STBs from Cablevision is to have access to one-way HD technology.”²⁶ Her argument appears to be that since subscribers use STBs to access one-way video services, somehow this implies that STBs are not tied to Cablevision’s TWS. In this argument she confuses what a tie is. A tie occurs in the following way: if a customer wants to buy

²⁶ Stiroh Report, ¶ 22.

the tying product (TWS), they must buy the tied product (STB). This is not the same as saying if a person buys the tied product (STB), they must buy the tying product (TWS). Dr. Stiroh claims that if a person rents an STB but does not access TWS, this violates the tying claim. In doing so she defies basic logic. [REDACTED]

[REDACTED]

[REDACTED]

20. Dr. Stiroh examines “Cablevision’s own transition to providing all video services in digital format. . . .”²⁷ She asserts that in this transition, “a substantial portion of Cablevision’s customer base would have leased an STB from Cablevision regardless of any demand for interactive services.”²⁸ Cablevision’s customers transitioning to digital service could have rented a CableCARD (a cheaper option which excludes access to TWS) instead of an STB (which enables access to TWS). However, as discussed above, Table 2 of the Hastings Report shows that essentially all of Cablevision’s digital customers have chosen not to rent CableCARDS. Therefore, consumer preference reveals that Cablevision’s digital customers valued TWS and chose to rent STBs. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

21. Dr. Stiroh argues: “While Dr. Hastings includes only four interactive services (VOD, PPV with a remote, the IPG, and iO Games) in her purported tying product, Cablevision’s

²⁷ Stiroh Report, ¶ 121.

²⁸ Stiroh Report, ¶ 126. See also Stiroh Report ¶¶ 110, 166, 244-246, 282-285, 287, 289-297, 303, 307-312, and 314.

interactive services include a much broader, heterogeneous collection of services that have evolved over time.”²⁹ This argument is irrelevant. Cablevision does offer interactive services in addition to the four identified in the Hastings Report, e.g., “Optimum Auto,” an interactive car shopping service. But that fact does not change the reality that common evidence—including Cablevision’s own website—establishes that to receive TWS, Cablevision requires its subscribers to rent an STB, or “digital cable box,” from Cablevision.³⁰ A subscriber cannot receive TWS by renting a CableCARD.³¹

22. [REDACTED]

[REDACTED]. The reason is simple: [REDACTED] for CableCARDS arises because customers generally value TWS and the IPG in particular because it allows them to search, select, and record various channels in their video packages (many of which contain hundreds of channels), all from the convenience of their home with a remote control. CableCARDS are not a substitute for this desired experience of convenient home viewing of digital video content.

23. [REDACTED]

[REDACTED]

²⁹ Stiroh Report, ¶ 27.

³⁰ CVC-Marchese-03255611 at 611; CVC-Marchese-00319929 at 929; Deposition of Stephanie Reina (May 2, 2014), 162:15–21; Fifth Amended Complaint, ¶ 41. See CSC, “Using a CableCARD with Optimum TV,” available at http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed on June 9, 2014).

³¹ CVC-Marchese-00104444 at 444; CVC-Marchese-00973657 at 698; Deposition of Kristin Dolan (April 8, 2014), 125:22–126:19. See also, CSC, “Using a CableCARD with Optimum TV,” available at http://optimum.custhelp.com/app/answers/detail/a_id/651 (accessed on June 9, 2014).

³² CVC-Marchese-03464421 at 430.

³³ CVC-Marchese-03464421 at 479.

[REDACTED]

24. These conclusions regarding the importance of IPGs are supported by IPG usage statistics reported by Rovi Corporation (“Rovi”). In 2011, Rovi and Cablevision “entered into a multi-year agreement whereby Cablevision will license Rovi interactive program guide (IPG) intellectual property.”³⁸ As stated in a May 2012 Rovi press release: “Rovi’s set-top-box data from a sample of the millions of devices running Rovi IPG products and technologies revealed that 94% of homes now visit the TV listings grid on a weekly basis. *The report also found that on average Guide users visit the TV listings grid 15 times daily and interact with it for a combined total of 16 minutes. In addition, usage statistics uncovered that approximately one third of all TV viewing time is a result of choices made from the guide.* . . . ‘The latest usage figures underline the

³⁴ CVC-Marchese-01857551 at 561.

³⁵ CVC-Marchese-01857551 at 564.

³⁶ CVC-Marchese-01857551 at 577.

³⁷ CVC-Marchese-01857551 at 577.

³⁸ Rovi Corporation, “Rovi and Cablevision Sign Intellectual Property License Agreement,” February 15, 2011, available at <http://ir.rovicorp.com/Mobile/file.aspx?IID=4206196&FID=10750252> (accessed November 5, 2014).

importance of the Guide in helping consumers search and discover great TV entertainment,’ said Jeff Siegel, senior vice president, Worldwide Advertising, Rovi Corporation.”³⁹

II.B. *Rebuttal to Dr. Stiroh’s comments on competition to Cablevision’s video and STB services*

25. Dr. Stiroh claims that Cablevision’s video competitors include:

[S]ervices through a variety of online video distributors (“OVDs”) that transmit video content directly from the internet to computers, televisions, tablets, smartphones, and other devices; brick-and-mortar stores; DVD rental providers; companies offering DVR services; online and mobile video games; internet program guides; online photo services; and publications and websites offering auto, real estate, news, sports, weather, and traffic content.⁴⁰

26. Dr. Stiroh ignores the evidence that details Cablevision’s analysis of its competitors. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(see Hastings Report, Section III.A.1).

27. According to Dr. Stiroh, Cablevision’s VOD services have faced competition from brick-and-mortar stores, DVD rental providers, and OVD content providers.⁴¹ Brick-and-mortar stores, DVD rental providers, and OVD content providers are not substitutes for TWS. [REDACTED]

[REDACTED]

[REDACTED]

³⁹ Rovi Corporation, “Rovi Set-Top Box Data Reveals Continued Consumer Reliance on Interactive Program Guide,” May 22, 2012, available at <http://ir.rovicorp.com/Mobile/file.aspx?IID=4206196&FID=13484732> (accessed November 5, 2014) (emphasis added).

⁴⁰ Stiroh Report, ¶ 47.

⁴¹ Stiroh Report, ¶ 74.

[REDACTED]

28. With respect to STBs, Dr. Stiroh claims that “STBs from companies such as TiVo and Moxi offer comparable DVR functionality to Cablevision’s DVR services, along with additional features,”⁴² and that “the number of alternatives to Cablevision’s multi-room DVR service has increased as STB manufacturers and others have developed more TiVo-like boxes.”⁴³ Dr. Stiroh leaves out a key point: TWS such as VOD, the IPG, and PPV via remote are not available on these third-party DVR STBs. [REDACTED]

[REDACTED]

[REDACTED] Therefore, consumer preference reveals that these third-party STBs are not an adequate substitute for Cablevision’s STBs.

29. Finally, Dr. Stiroh misleadingly claims: “Cablevision’s subscribers do not need an STB leased from Cablevision to access Cablevision’s programming guide.”⁴⁴ Her statement is misleading because the only “alternative” is Cablevision’s own Optimum App, which as discussed above is a complement—not a substitute to Cablevision’s STBs.

II.C. *Rebuttal to Dr. Stiroh’s comments on Cablevision’s video services business model*

30. In several parts of her report, Dr. Stiroh attempts to argue that the class should not be certified because different subscribers may benefit differently from renting STBs under Cablevision’s current rental model.⁴⁵ This is a red herring argument. It does not raise any classwide

⁴² Stiroh Report, ¶ 85. See also, Stiroh Report, ¶¶ 83-87.

⁴³ Stiroh Report, ¶ 86. See also, Stiroh Report, ¶¶ 83-87.

⁴⁴ Stiroh Report, ¶ 94.

⁴⁵ Stiroh Report, ¶¶ 109-118. See also, Stiroh Report, ¶¶ 196-197, 224, 239-246, 250, 258, 273, 288-297, 309, 377.

issues as the but-for competitive price can be calculated using evidence and methodologies common to the class. She proceeds to speculate over potential benefits of renting STBs under the current tied contracts, but offers no reliable evidence to support her speculation.

31. By way of attempting to demonstrate the benefits of Cablevision's leasing model, Dr. Stiroh states that "alternative devices [e.g., TiVo] require subscribers to incur potentially high upfront and ongoing costs"⁴⁶ and that "leasing an STB from Cablevision does not require subscribers to incur such large upfront costs."⁴⁷ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Moreover, her claim is inconsistent with her own assertion that:

STBs are also commonly used for many of the other competitive alternatives to Cablevision's various interactive services. For example, devices like TiVo, Apple TV, Roku, Boxee, Amazon Fire TV, LG Blu-Ray, and Google Chromecast function similarly to STBs and can all be used to access streaming VOD content from OVDs. Further, gaming systems such as Microsoft's Xbox platform and Sony's PlayStation 3 also function similarly to STBs leased from Cablevision and can also be configured to provide access to certain services that compete with some of the interactive services offered by Cablevision.⁴⁹

All these consumer electronic products are purchased—not rented—by subscribers. Also, as discussed below and contrary to Dr. Stiroh's understanding of the but-for world, subscribers in the but-for world would be able to purchase or rent STBs from companies other than Cablevision.

⁴⁶ Stiroh Report, ¶111.

⁴⁷ Stiroh Report, ¶112.

⁴⁸ Stiroh Report, ¶112.

⁴⁹ Stiroh Report, ¶ 104.

32. In addition, Dr. Stiroh bases her opinion in part of statements from Dr. Wall which are both misleading and unsubstantiated.⁵⁰ One of Dr. Wall's statements on which Dr. Stiroh relies is as follows: "In addition, based on my research, purchased STBs make up a small percentage of the overall STBs that are used by subscribers of the major Canadian MVPDs."⁵¹ Dr. Wall fails to offer any empirical evidence to support his claim. In addition, his deposition testimony shows that the claim is at best highly misleading. In his testimony, Dr. Wall stated that he excluded rent-to-own STBs from his description of purchased STBs.⁵² But from an economic perspective, subscribers who chose to pay rent-to-own rates rather than pure rental rates do so because it lowers their NPV cost, which would occur if the length of time they expect to use the STBs is sufficiently long. For example, a Canadian subscriber to Rogers Communications' cable service can choose to rent-to-own and pay \$7.50 per month (and after 36 months own the box for \$1.00) or rent for \$12.95 per month.⁵³ Thus, excluding rent-to-own (which is how a majority of Canadian subscribers acquire their STB)⁵⁴ works to understate the percentage of STB users who choose to own their STBs.

33. *Cablevision's innovation.* [REDACTED]

⁵⁰ Stiroh Report, ¶ 112, footnotes 342 and 343.

⁵¹ Wall Report, ¶ 22.

⁵² Deposition of Gerald Wall (November 4, 2014), 86:14–87:11.

⁵³ Rogers Communications, "Hardware," available at http://www.rogers.com/web/Rogers.portal?_nfpb=true&_pageLabel=cable_hardware_page (accessed November 19, 2014); Rogers Communications, "Hardware," available at http://web.archive.org/web/20130723065842/http://www.rogers.com/web/Rogers.portal?_nfpb=true&_pageLabel=cable_hardware_page (July 23, 2013).

⁵⁴ The majority of Canadian customers lease to own. See Deposition of Gerald Wall, Ph.D. (November 4, 2014), 81:16–82:12.

⁵⁵ Stiroh Report, ¶117 [REDACTED]

III. REBUTTAL TO DR. STIROH'S COMMENTS ON "SUMMARY OF THE HASTINGS REPORT AND ITS FLAWS"

34. Dr. Stiroh claims that my report does "not identify the conduct giving rise to the alleged tie. . . ." ⁵⁶ Dr. Stiroh is incorrect. Section II.D of the Hastings Report details the conduct giving rise to the alleged tie. I specifically state that "Cablevision customers must rent an STB from Cablevision to access TWS" ⁵⁷ and that "to receive TWS, Cablevision requires its subscribers to rent an STB, or 'digital cable box,' from Cablevision. A subscriber cannot receive TWS by renting a CableCARD." ⁵⁸

35. According to Dr. Stiroh, I do "not explain whether the facts in the case specify conditions in which tying might harm competition" ⁵⁹ Dr. Stiroh is incorrect. I state: "Tying causes harm to competition when a firm with market power in the tying market uses that market power to coerce customers into buying a second product (the tied product) from them. Tying can then lessen competition in the tied market, thus lowering consumer welfare through higher prices for the tied product and/or reduced choice and quality." ⁶⁰ I also explain the four elements that can be established using accepted economic methodologies to demonstrate the validity of a tying

⁵⁶ Stiroh Report, ¶ 173.

⁵⁷ Hastings Report, ¶ 47.

⁵⁸ Hastings Report, ¶ 45.

⁵⁹ Stiroh Report, ¶ 173.

⁶⁰ Hastings Report, ¶ 20.

claim.⁶¹ I understand that the court in this case also has stated: “In order to make out a § 1 *per se* tying claim, a plaintiff must appropriately allege facts indicating: (1) a defendant seller tied two distinct products, conditioning sale of one product on the purchase of a different tied product; (2) the seller possesses market power in the tying product market; and (3) a substantial amount of interstate commerce is affected.”⁶²

36. Dr. Stiroh asserts: “[Dr. Hastings] articulates no but-for world and does not assess the potential for reoptimization; she fails to address potential efficiencies; and she fails to consider how different subscribers would be impacted differently in the but-for world.”⁶³ Dr. Stiroh is incorrect. By definition, the but-for world is the world absent the disputed conduct. In the actual world, Cablevision charged supra-competitive prices for STBs in its Tri-State Footprint. I state that in the but-for world, “there is a competitive price and a competitive market.”⁶⁴ In the but-for world, firms selling STBs earn their opportunity cost and do not earn-supra competitive profits. Therefore, in the but-for world absent tying, Cablevision’s alleged conduct would change because the firm would no longer be able to charge supra-competitive prices by tying TWS to STBs.

IV. REBUTTAL TO DR. STIROH’S COMMENTS ON MY ECONOMIC ANALYSIS OF TYING CLAIMS

IV.A. *Rebuttal to Dr. Stiroh’s claim that my report does not specify the alleged tie and the but-for world*

37. Dr. Stiroh states: “No valid economic analysis of a tie is possible when, as here, there is no clear specification of the tying conduct. Dr. Hastings similarly does not identify the tie or the conduct giving rise to the supposed tie. . . .”⁶⁵ This accusation lacks foundation. My report

⁶¹ Hastings Report, ¶ 36.

⁶² *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *2 (D.N.J. Jan. 9, 2012).

⁶³ Stiroh Report, ¶ 173.

⁶⁴ Deposition of Justine S. Hastings, Ph.D. (September 23, 2014), 143:14-16.

⁶⁵ Stiroh Report, ¶ 175.

makes clear the conduct that gives rise to the tie: “Subscribers must lease an STB from Cablevision in order to receive TWS.”⁶⁶

38. Dr. Stiroh claims that I do “not explain how Cablevision’s alleged conduct would change in the but-for world absent the supposed tying.”⁶⁷ However, as discussed above, in the actual world, Cablevision charged supra-competitive prices for STBs in its Tri-State Footprint. I testified in my deposition that in the but-for world: “there is a competitive price and a competitive market.”⁶⁸ Dr. Stiroh appears to confuse the but-for-world and a competitive price with the identity of competitors in the market. It is not necessary to specify which firms would provide STBs at the competitive price. Rather, what is required is to determine what that price is. Long-standing and sound economic principles demonstrate that the but-for competitive price equals the opportunity cost of potential providers.

39. According to Dr. Stiroh, my “description of the asserted tying product market is misleading and incomplete. Dr. Hastings asserts that the tying product is composed only of four specific interactive services. However, she also recognizes that no such actual product exists.”⁶⁹ On the contrary, I did not assert that “no such actual product exists,” but rather that these services “as a commercial reality are purchased with a subscription to a digital video service.”⁷⁰ Dr. Stiroh complains that I should ignore the commercial reality that Cablevision’s customers subscribe to TWS in effect exclusively through a digital video service iO Package and that these TWS are not available through the use of a substitute (such as a CableCARD). [REDACTED]

⁶⁶ Hastings Report, ¶ 18.

⁶⁷ Stiroh Report, ¶ 176.

⁶⁸ Deposition of Justine S. Hastings, Ph.D. (September 23, 2014), 143:14-16.

⁶⁹ Stiroh Report, ¶ 177.

⁷⁰ Hastings Report, ¶ 54.

Moreover, the Court in this matter credited this same point in its decision denying Cablevision's motion to dismiss Plaintiffs' tying claims.⁷¹

40. Dr. Stiroh states: "Cablevision customers need not lease an STB to access linear television programming, a key component of Cablevision's video packages."⁷² This is correct because of the existence of CableCARDS. However, she concludes that this fact "preclude[s] class-wide proof of causation and coercion, among other elements."⁷³ This is a non sequitur—my report does not assert that linear television programming is the tying product. Moreover, my economic analysis of the four required elements of a tying claim are not invalidated simply because a subscriber can use a CableCARD to access linear television programming.

IV.B. *Rebuttal to Dr. Stiroh's claim that I ignore alleged efficiencies of tying*

41. In regards to economic models in which "tying, under very specific conditions, can harm competition in the tying or tied product markets,"⁷⁴ Dr. Stiroh states that "each of these models requires that a specific set of conditions be present in order to predict consumer harm."⁷⁵

Dr. Stiroh summarizes research by Professor Whinston,⁷⁶ stating:

⁷¹ *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, p. 15 (D.N.J. January 9, 2012).

⁷² Stiroh Report, ¶ 180.

⁷³ Stiroh Report, ¶ 180.

⁷⁴ Stiroh Report, ¶ 187.

⁷⁵ Stiroh Report, ¶ 187.

⁷⁶ Whinston, M. (1990), "Tying, Foreclosure, and Exclusion," *American Economic Review*, vol. 80(4), pp. 837-59 (hereinafter "Whinston").

[I]f economies of scale exist in the tied product market, then it may be possible for the monopolist to foreclose competition, particularly if, by tying, the monopolist can capture tied product sales that would have otherwise gone to other competitors, and thus, increase its scale and realize a cost advantage that it could use to drive its competitors out of the market. To the extent that consumers, as a result, enjoy lower prices, however, this is not anticompetitive; it may become anticompetitive only if the firm later attempts to raise price above the competitive level, a strategy that would not work if there are not barriers to entry that would prevent the competitive firms from re-entering the market.⁷⁷

42. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] In this case, an important barrier to entry into the tied product market is Cablevision's tying policy. By citing Professor Whinston, Dr. Stiroh (unintentionally) makes the point that Cablevision's tie is in fact anticompetitive.

43. According to Dr. Stiroh, I "[presume] that the alleged tie at issue *must* have injured customers, without considering whether it actually does."⁸⁰ This is incorrect. By demonstrating that the [REDACTED], I show that Cablevision's subscribers suffered antitrust injury as a result of the tie. My report carefully analyzes whether the tied sale had a common impact on the proposed Class. In particular, I show that a standard NPV analysis utilizing a common methodology and common evidence can be used to determine whether the tied sale had a common impact on the proposed class. In addition, my report shows that the NPV methodology can be used reliably to measure damages.

⁷⁷ Whinston, pp. 855-856.

⁷⁸ Hastings Report, ¶¶ 127, 135, and 143

⁷⁹ Hastings Report, ¶¶ 102-108.

⁸⁰ Stiroh Report, ¶191.

44. Dr. Stiroh states: “The above summary of the economic analysis of tying highlights the critical importance of identifying how the tie might serve to foreclose competition and thus lead to anticompetitive harm. This would require an explanation of the nature of the tie and the marketplace realities surrounding it, which Dr. Hastings does not do.”⁸¹ Dr. Stiroh is incorrect—Sections II and III of the Hastings Report explain the nature of the tie and the marketplace realities surrounding it. Section II of the Hastings Report explains that TWS and STBs are the tying and tied products.⁸² STBs and TWS are two separate products that customers would purchase separately in the absence of the tie.⁸³ Common evidence can be used to establish that renting an STB from Cablevision is a condition for being able to receive TWS from Cablevision.⁸⁴ In order to receive TWS, Cablevision requires its subscribers to rent an STB, or “digital cable box.” Subscribers cannot receive TWS by renting a CableCARD.⁸⁵ Section III of the Hastings Report demonstrates that Cablevision has market power in the tying-product market using evidence common to the class.

45. Dr. Stiroh claims: “[Dr. Hastings] has failed to identify any mechanisms through which Cablevision’s alleged leveraging might lead to the foreclosure of competition in STBs, to higher prices for consumers overall. . . .”⁸⁶ Dr. Stiroh is incorrect. I clearly identify the “mechanisms through which Cablevision’s alleged leveraging might lead to the foreclosure of competition in STBs.” First, I show that there is “common evidence of the existence of significant

⁸¹ Stiroh Report, ¶ 191.

⁸² Hastings Report, ¶¶ 38-43.

⁸³ Hastings Report, ¶ 37.

⁸⁴ Hastings Report, ¶ 44.

⁸⁵ Hastings Report, ¶ 45.

⁸⁶ Stiroh Report, ¶ 191. See also, Stiroh Report, ¶ 217.

barriers to entry”⁸⁷ for competing MVPDs. [REDACTED]

[REDACTED] Third, I show that “Cablevision conditions the purchase of its TWS on the rental of its STBs.”⁸⁸ Cablevision subscribers with third-party STBs do not have access to TWS. Third-party STBs require a CableCARD. [REDACTED]

[REDACTED] Section IV of the Hastings Report shows the results of my economic analyses. [REDACTED]

46. Dr. Stiroh asserts that I “did not examine competitive conditions in the asserted tied product market.”⁹⁰ As a threshold matter, I understand that competitive conditions in the tied product market are not relevant to a *per se* tying claim, such as Plaintiffs’ claim in the present matter.⁹¹ In addition, Dr. Stiroh’s claim is wrong—Section II.A.2 of the Hastings Report examines the competitive conditions in the tied product market. Based on my economic analysis, I conclude: “There are no reasonable substitutes for the STBs that are required in order for subscribers to

⁸⁷ Hastings Report, ¶¶ 102-108.

⁸⁸ Hastings Report, ¶ 48.

⁸⁹ Hastings Report, ¶¶ 127, 135, and 143

⁹⁰ Stiroh Report, ¶ 191. Dr. Stiroh makes a similar claim later in her report. According to Dr. Stiroh, “at various points during the class period Cablevision has introduced TV to GO and the Optimum App, through which certain interactive services, such as the ability to search for programming and Caller ID, are available. . . . These alternative means of accessing certain interactive services have not been available throughout the class period, nor have they been available on all devices at any given point in time.” Stiroh Report, ¶¶ 305-307. Dr. Stiroh’s “alternative means” are not in fact supplied by alternative providers, but rather by Cablevision.

⁹¹ As the Court stated: “Since this Court finds that Plaintiffs have sufficiently pled facts regarding a *per se* tying violation, the requisite elements generally required for proving a tying violation under rule of reason analysis – causation of antitrust injury and rebutting procompetitive justifications for a tie in – need not be assessed at this stage.” With regard to causation of antitrust injury, the Court described it as “a viable theory of causation of antitrust injury in that a defendant’s alleged tying resulted in anticompetitive effects (e.g., through the forced purchase of inferior goods, consumer surprise, difficulty in consumer ability to make price comparisons, or foreclosure of the tied product market). . . .” *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *21 (D.N.J. January 9, 2012).

access digital video services with TWS.”⁹² In addition, as I testified in my deposition, Cablevision’s subscribers “have to take a set-top box from Cablevision so the only seller to Cablevision subscribers is Cablevision.”⁹³ The lack of competitive alternatives to Cablevision’s STBs reflects the lack of competition in the tied product market. Moreover, my economic analysis uses methodologies and evidence common to the class.

47. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

48. Finally, I understand that as a legal matter, Dr. Stiroh’s discussion of alleged efficiencies is irrelevant to Plaintiffs’ *per se* tying allegations.⁹⁵ I understand that any alleged efficiencies would only possibly become relevant if Plaintiffs’ tying allegations were analyzed under a rule-of-reason analysis. However, even in that event, the alleged efficiencies raised by Dr. Stiroh would be analyzed on a class-wide basis.

IV.C. *Rebuttal to Dr. Stiroh’s “reoptimization” claim*

49. [REDACTED]

[REDACTED] ” [REDACTED]

⁹² Hastings Report, ¶ 76.

⁹³ Deposition of Justine S. Hastings, Ph.D. (September 23, 2014), 135:24-136:3.

⁹⁴ Hastings Report, Section II.B, see especially ¶¶ 31-32 and Figures 1-4.

⁹⁵ As the Court stated: “Since this Court finds that Plaintiffs have sufficiently pled facts regarding a *per se* tying violation, the requisite elements generally required for proving a tying violation under rule of reason analysis – causation of antitrust injury and rebutting procompetitive justifications for a tie in – need not be assessed at this stage.” *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *21 (D.N.J. January 9, 2012).

⁹⁶ Stiroh Report, ¶¶ 193-199. See also, Stiroh Report, ¶¶ 150, 165, 171, 220-221, 223, 227, and 420-424.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] These empirical facts are consistent with the basic fact that the tying and tied product markets are separate. Dr. Stiroh has offered no empirical evidence to support her claims.

50. Furthermore, Dr. Stiroh's claim is inconsistent with economic theory. For example, Carlton and Waldman (2002) show "how a firm that is currently a monopolist in its primary market can use tying of a complementary product to preserve its monopoly position by deterring future entry into the primary market."⁹⁷ As Elhauge (2009) explains: "Suppose that a firm's tying market power is vulnerable to an increased threat of future entry if successful rival producers exist in the tied market. If so, then the firm has incentives to engage in defensive leveraging, foreclosing the tied market in order to deter or delay later entry into the tying market, thus maintaining its tying market power for longer or at a higher degree than it would have without tying."⁹⁸

51. Dr. Stiroh claims that if a firm were not allowed to engage in a tie, "the price of the alleged tying product or other closely related products would go up, serving to offset some or all

⁹⁷ Carlton, D. and Waldman, M. (2002), "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries," *Rand Journal of Economics*, vol. 33(2), pp. 194-220, at 194.

⁹⁸ Elhauge, E. (2009), "Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory," *Harvard Law Review*, vol. 123(2), pp. 397-481, at 417.

of the potential price reduction in the tied product that results from undoing the tie. If, as Dr. Hastings asserts, there is market power in the tying product, and thus pricing discretion, reoptimization through changing the price of the tying product is all the more likely.”⁹⁹ However, Dr. Stiroh has offered no evidence to suggest, much less demonstrate, that Cablevision’s prices for “the alleged tying product or other closely related products” are not set at profit-maximizing levels. Cablevision’s tying enables the firm to capture profits in rental of STBs that it does not capture in the sale of “the alleged tying product or other closely related products.” In this regard, it is important to recognize the tying and tied products are not sold in a fixed, e.g., 1-to-1, proportion. Different subscribers purchasing the same TWS or digital video services may rent different numbers of STBs. In this circumstance, economic theory shows that tying can increase the firm’s profits.¹⁰⁰

52. Moreover, the past is the past. Plaintiffs claim that in the damages period Cablevision used its tying policy to charge anticompetitively high prices for STBs. [REDACTED]

[REDACTED]

[REDACTED].

53. [REDACTED]

[REDACTED] Dr. Stiroh is wrong. In the portion of my deposition cited by Dr. Stiroh, my testimony concludes by stating: “I would have to look at a specific model in context.”¹⁰² Moreover, the questions posed did not pertain to a firm being engaged in an antitrust

⁹⁹ Stiroh Report, ¶ 195.

¹⁰⁰ See, e.g., Elhauge, E. (2009), “Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory,” *Harvard Law Review*, vol. 123(2), pp. 397-481.

¹⁰¹ Stiroh Report, ¶ 194.

¹⁰² Deposition of Justine S. Hastings, Ph.D. (September 23, 2014), 148:10-11.

violation and thus forced to cease tying. Thus, I do not agree with Dr. Stiroh's "reoptimization" claim, for all the reasons presented here.

54. Dr. Stiroh states: "assessing both (i) the universe of possible Cablevision responses to Plaintiffs' allegation that, in the but-for world, there would be lower lease rates for STBs and (ii) Cablevision's subscribers' reactions to Cablevision's resulting revised pricing are crucial to a determination of whether impact from the alleged tie can be shown using common evidence. Dr. Hastings, as she conceded at her deposition, entirely ignored this inquiry."¹⁰³ Here, Dr. Stiroh demonstrates her fundamental misunderstanding of the but-for world specified in my expert report. That but-for world correctly removes the anticompetitive effects of the disputed conduct and allows subscribers to procure STBs at competitive rates. My report does not assume that Cablevision either sells or rents STBs in the but-for world. Indeed, in the but-for world in which it must compete with retailers such as Best Buy, Cablevision may not be able to sell or rent STBs profitably. In sum, as a consequence of her fundamental misunderstanding of the but-for world specified in my expert report, Dr. Stiroh's criticisms are misplaced.

IV.D. *Rebuttal to Dr. Stiroh's claim regarding "reoptimization" and alleged lost efficiencies in the but-for world*

55. Dr. Stiroh states: "It follows that a but-for world requiring that Cablevision ensure that any STB sold by third-party suppliers could interface with Cablevision's system and provide customers access to its one-way and interactive services would result in higher development and deployment costs."¹⁰⁴ The implication of Dr. Stiroh's claim is that removing the tie would cause STB prices to increase. This claim is speculation. There is no evidence to support it. In addition,

¹⁰³ Stiroh Report, ¶ 199. Dr. Stiroh repeats this argument at ¶ 443 and ¶ 460, where she claims that my analysis shows that in the but-for world, [REDACTED]. For the reasons explained here, Dr. Stiroh is incorrect. See also, Stiroh Report, ¶¶ 165, 201-203, 216, 224, 240, 272-275, 279, 458, 463, and 492.

¹⁰⁴ Stiroh Report, ¶ 201. See also, Stiroh Report, ¶¶ 202-203, 224, 240, and 492.

it is refuted by the experience of Canadian cable companies which do not tie and, as documented in my prior report, [REDACTED].

56. In this regard Dr. Stiroh states:

[REDACTED]

However, in Canada, where “cable companies do not tie TWS to the lease of an STB,”¹⁰⁶ customers can purchase an STB from Best Buy, yet Canadian cable companies such as Shaw,¹⁰⁷ Rogers,¹⁰⁸ and Telus¹⁰⁹ all offer multi-room DVR. Moreover, Plaintiffs do not assert damages regarding Cablevision’s multi-room DVR charges.

57. Dr. Stiroh states: “Because Dr. Hastings has not described what actions Cablevision would take in the but-for world, she provides no method – class-wide or otherwise – to assess the impact of these lost efficiencies. Moreover, how individual subscribers would be impacted by such lost efficiencies is an individual issue incapable of analysis using common evidence, because, as I demonstrate below, subscribers value Cablevision’s video services (of which interactive services is one) and its STB distribution model differently.”¹¹⁰ As discussed above, I understand that as a legal matter, Dr. Stiroh’s discussion of alleged efficiencies are irrelevant to Plaintiffs’ *per se* tying

¹⁰⁵ Stiroh Report, ¶ 202 (footnotes omitted). See also, Stiroh Report, ¶¶ 226, 239, 267, and 467.

¹⁰⁶ Hastings Report, ¶ 33.

¹⁰⁷ Gateway Whole Home HDPVR, available at <http://www.shaw.ca/gateway/> (accessed November 19, 2014).

¹⁰⁸ Rogers, available at http://www.rogers.com/web/Rogers.portal?_nfpb=true&_pageLabel=PTV_Landing&cm_mmc=Redirects_-_Cable_Eng_-_PTV_0309_-_tv (accessed November 19, 2014).

¹⁰⁹ TELUS Optik TV, available at <http://www.telus.com/en/ab/tv/hardware.jsp?INTCMP=TVRiverflowHardwarePVR> (accessed November 19, 2014).

¹¹⁰ Stiroh Report, ¶ 203. See also, Stiroh Report, ¶¶ 169, 215, 226, 239, 267, and 467.

allegations.¹¹¹ I understand that any alleged efficiencies would only possibly become relevant if Plaintiffs' tying allegations were analyzed under a rule-of-reason analysis. However, even in that event, the alleged efficiencies raised by Dr. Stiroh would be analyzed on a class-wide basis.

58. According to Dr. Stiroh:

That Cablevision's alleged conduct is not driven by a motive to exploit customers who demand interactive services, but rather produces efficiencies, the loss of which would require subscriber-specific inquiries, is further supported by the observed choices of Cablevision's competitors. Other MVPDs that compete with Cablevision, such as Verizon and AT&T, require their customers to lease an STB from them (or, if supported, a CableCARD device) as part of their overall service contract. As is implicit in Dr. Hastings' analysis, none of these MVPD competitors has a share high enough to support an inference of market power in her alleged tying product market. Yet each engages in the conduct that Plaintiffs challenge here.¹¹²

59. Dr. Stiroh's comment about Cablevision's "motive" has no foundation in economics. Industrial Organization ("IO") economists assume a firm's goal is to maximize its profits. IO economists do not have expertise in analyzing a firm's "motive." In addition, AT&T and Verizon's tying policies are not at issue in the present case, but even if they were, the standard model of "umbrella pricing" is consistent with their observed tying policies. Umbrella pricing refers to a situation in which a firm with little or no market power sets its prices just under the anticompetitive price set by a dominant firm.¹¹³ In addition, the tying policies of A&T and Verizon are also consistent with the standard model of "price leadership."¹¹⁴

¹¹¹ As the Court stated: "Since this Court finds that Plaintiffs have sufficiently pled facts regarding a *per se* tying violation, the requisite elements generally required for proving a tying violation under rule of reason analysis – causation of antitrust injury and rebutting procompetitive justifications for a tie in – need not be assessed at this stage." *Marchese v. Cablevision Systems Corp.*, No. 10-2190 (JLL), 2012 WL 78205, *21 (D.N.J. January 9, 2012).

¹¹² Stiroh Report, ¶ 204.

¹¹³ See, e.g., Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, chapter 4, p.111.

¹¹⁴ See, e.g., Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, pp. 349-350.

V. REBUTTAL TO DR. STIROH’S CLAIM THAT IMPACT CANNOT BE PROVEN USING COMMON METHODOLOGIES AND COMMON EVIDENCE

60. According to Dr. Stiroh, “Dr. Hastings thus never asks whether that impact can be proven class-wide.”¹¹⁵ Dr. Stiroh is incorrect. In Section IV of the Hastings report, I explain that I rely on a common methodology based on common evidence to determine that all or virtually all members of the proposed Class have suffered common antitrust injury by paying supra-competitive prices for STBs as a result of Defendant’s tying conduct. I apply the common NPV methodology by using four types of common evidence: (1) Cablevision’s rental rates for STBs in its Tri-State Footprint; (2) Cablevision’s costs of purchasing these STBs and actual STB prices offered in Canada by Best Buy and Canadian MVPDs; (3) information on the number of years that Cablevision earns rental revenues for these STBs; and (4) Cablevision’s competitive rate of return.¹¹⁶

V.A. *Rebuttal to Dr. Stiroh’s claim that I allegedly fail to specify the but-for world*

61. Dr. Stiroh incorrectly states: “[Dr. Hastings] does not, for example, provide any evidence or analysis that Cablevision’s alleged tie meets any of the specific conditions under which tying might harm competition in a properly defined tied product market.”¹¹⁷ As stated in my prior report, to demonstrate the validity of a tying claim, four elements must be established using accepted economic methodologies.¹¹⁸

¹¹⁵ Stiroh Report, ¶ 209.

¹¹⁶ Hastings Report, ¶¶ 131 and 139.

¹¹⁷ Stiroh Report, ¶ 213.

¹¹⁸ Hastings Report, ¶ 36.

62. First, two separate products or services must be involved in the tie. I rely on facts that are common to the class to establish that Plaintiffs are capable of proving, through common evidence, that the tying and tied products are separate products.¹¹⁹

63. Second, the sale of one product or service (the “tying” product or service) must be conditioned upon the purchase of a second product or service (the “tied” product or service). I conclude that common evidence can be used to establish that Cablevision conditions the purchase of its TWS on the rental of its STBs.¹²⁰

64. Third, the tie must affect a substantial amount of interstate commerce in the tied product market. I conclude that Plaintiffs are capable of proving, through common evidence, that Cablevision conducted a substantial volume of interstate commerce in the tied, STB market.¹²¹

65. Fourth, the seller must have market power in the tying market. My report shows, through both direct and indirect economic evidence, that Cablevision has market power in the tying-product market using evidence common to the class.¹²²

66. With respect to defining the but-for world, Dr. Stiroh states:

In particular to assess the impact of the alleged tie on a customer, one must assess at least the following (among other things) over the entire class period:¹²³

- a. What video packages would Cablevision offer to consumers in the but-for world (i.e., absent the alleged tie)?¹²⁴
- b. What would Cablevision’s prices be for the various video packages, and other equipment, offered to consumers in the but-for world?¹²⁵

¹¹⁹ Hastings Report, Section II.C.

¹²⁰ Hastings Report, Section II.D.

¹²¹ Hastings Report, Section II.E.

¹²² Hastings Report, Section III.

¹²³ Stiroh Report, ¶ 226.

¹²⁴ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 8, 100, 150-158, 258-270, 361, and 420-424.

¹²⁵ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 8, 193-196, 198-199, 212, 215, 218, 220-223, 227-237, 239, 267, 271-276, and 420-424, 434-443, 458-459, 463-469, 471-476.

- c. Given Cablevision's video service offerings and the prices for those offerings in the but-for world, what video packages and services would the subscriber select?¹²⁶
- d. How would Cablevision-compatible STBs be distributed in the but-for world, which STB models would be distributed, and at what prices?¹²⁷
- e. Which Cablevision-compatible STB models would the subscriber select and what prices would the subscriber pay? For example, would the subscriber choose to lease, lease-to-own, or purchase a Cablevision-compatible STB in the but-for world and at what prices?¹²⁸
- f. How long would the subscriber keep a Cablevision-compatible STB (whether leased or purchased)?¹²⁹
- g. How and to what degree is the subscriber affected by other changes in the but-for world, such as a change in the quality of Cablevision's video services offerings and/or STBs?¹³⁰

67. Specifying the factors in Dr. Stiroh's list, which she incorrectly asserts must be specified in the but-for world, would require unnecessary speculation. Take for instance Dr. Stiroh's assertion that one must assess "what video packages would Cablevision offer to consumers in the but-for world (i.e., absent the alleged tie)."¹³¹ Currently, Cablevision has "[o]ver 570 all-digital channels available."¹³² As a theoretical matter, the number of possible packages that can be formed using 570 channels approximately equals 3×10^{171} , which exceeds the number of

¹²⁶ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 8, 212, 215, 225-227, 239, 258-270, and 422.

¹²⁷ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 165, 201-203, 216, 224, 240, 272-275, 279, 458, 463, and 492.

¹²⁸ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 166, 220, 224-225, 240-246, 248-251, 267, 277-281, 458-462, 475, and 493.

¹²⁹ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 112, 240-243, 458, 460-463, and 496-498.

¹³⁰ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 169, 197, 201-203, 215, 220, 239, 253-257, 267, 273, 381, 467, and 469.

¹³¹ Stiroh Report, ¶ 226. See also, Stiroh Report, ¶¶ 8, 100, 150-158, 258-270, 361, and 420-424.

¹³² CSC, "Cablevision," available at <http://www.cablevision.com/> (accessed October 31, 2014).

atoms in the universe.¹³³ The ability to compute all permutations of packages offered (existing and possible), all potential entrants, all technological innovations, all possible price discriminatory contracts, all actual and potential customers over a long time horizon, their choices in every permutation of the possible market place, and their welfare in all possible permutations is neither tractable nor required.

68. The but-for world specified in my report correctly removes the anticompetitive effects of the disputed conduct and allows subscribers to procure STBs at competitive rates. The correct specification of the but-for world does not require one to speculate on the essentially uncountable number of factors in Dr. Stiroh's list. Rather, what is required is that the but-for competitive price be established using the basic economic principle that in a competitive market, firms cannot earn more than their opportunity cost—the returns they would earn in the next best alternative use of their capital, time, and business resources.

69. According to Dr. Stiroh, “there is no evidence that—and Dr. Hastings does not explain how—Cablevision would possibly expect to foreclose entry for STBs, nor that it has in fact done so.”¹³⁴ First, I understand that as a legal matter, Dr. Stiroh's discussion of foreclosure of competition in the tied product market is irrelevant to Plaintiffs' *per se* tying allegations.¹³⁵ I understand that this issue would only possibly become relevant if Plaintiffs' tying allegations were

¹³³ The number of packages equals $2^{570}-1$, which equals approximately 3×10^{171} . The number of atoms in the universe equals approximately 1×10^{80} . See WolframAlpha, “Number of atoms in the universe,” available at <http://www.wolframalpha.com/input/?i=number+of+atoms+in+the+universe>.

¹³⁴ Stiroh Report, ¶ 217.

¹³⁵ As the Court stated: “Since this Court finds that Plaintiffs have sufficiently pled facts regarding a *per se* tying violation, the requisite elements generally required for proving a tying violation under rule of reason analysis – causation of antitrust injury and rebutting procompetitive justifications for a tie in – need not be assessed at this stage.” With regard to causation of antitrust injury, the Court described it as “a viable theory of causation of antitrust injury in that a defendant's alleged tying resulted in anticompetitive effects (e.g., through the forced purchase of inferior goods, consumer surprise, difficulty in consumer ability to make price comparisons, or foreclosure of the tied product market). . . .” *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *21 (D.N.J. January 9, 2012).

analyzed under a rule-of-reason analysis. However, even in that event, the analysis of foreclosure of competition in the tied product market would be analyzed with economic methodologies and evidence on a class-wide basis. I also understand that Cablevision did not challenge the definition of the tied product market in its Motion to Dismiss.

70. Second, with respect to her discussion of foreclosure in the tied product market, Dr. Stiroh suggests that the presence of CableCARDS somehow shows that Cablevision has not foreclosed competition in the tied product market.¹³⁶ [REDACTED]

[REDACTED] Dr. Stiroh also suggests that the presence of other MVPD suppliers, e.g., Verizon, somehow shows that Cablevision has not foreclosed competition in the tied product market. Again, this makes no economic sense—as I demonstrated in my prior report, the tied product market consists of STBs that can access Cablevision’s TWS. At present, Cablevision is the only firm from which subscribers are allowed to acquire such STBs.

V.B. *Rebuttal to Dr. Stiroh’s claim that Cablevision’s “reoptimization” in the but-for world precludes class-wide proof of impact*

71. Dr. Stiroh claims that I “assume that, in the but-for world, all subscribers would lease exactly the same STB from Cablevision as in the actual world. . . .”¹³⁷ As discussed above in Section IV.C, Dr. Stiroh is wrong. My prior report does not assume that Cablevision either sells or rents STBs in the but-for world. Indeed, in the but-for world in which it must compete with retailers such as Best Buy, Cablevision may not be able to sell or rent STBs profitably. She repeats

¹³⁶ Stiroh Report, ¶ 217.

¹³⁷ Stiroh Report, ¶ 220.

her mistake again in her speculative discussion of what prices Cablevision might charge for selling or renting STBs in the but-for world.¹³⁸

72. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

73. Dr. Stiroh argues that [REDACTED]

[REDACTED].¹⁴¹ As discussed above, Dr. Stiroh has a fundamental misunderstanding of the but-for world specified in my expert report. The but-for world specified in my report correctly removes the anticompetitive effects of the disputed conduct and allows subscribers to procure STBs at competitive rates. My report does not assume that Cablevision either sells or rents STBs in the but-for world. As a consequence of her fundamental misunderstanding, Dr. Stiroh's claim that "[REDACTED]"

¹³⁸ Stiroh Report, ¶ 240. See also, Stiroh Report, ¶¶ 165, 201-203, 216, 224, 226, 272-275, 279, 458, 463, and 492.

¹³⁹ Stiroh Report, ¶ 237, footnote 549. Dr. Stiroh repeats this argument at ¶¶ 438-442.

¹⁴⁰ Stiroh Report, ¶¶ 451-456.

¹⁴¹ Stiroh Report, p. 104. See also, Stiroh Report, ¶¶ 165, 201-203, 216, 224, 226, 240, 272-275, 279, 458, 463, and 492.

[REDACTED]

[REDACTED].

74. Even assuming, *arguendo*, that Dr. Stiroh's claim had any relevance, her analysis is hopelessly flawed. [REDACTED]

[REDACTED]

[REDACTED] However, the statistics provided in this figure are misleading.

75. First, Dr. Stiroh excludes subscribers with unknown starting and/or ending dates. This biases the calculation because it excludes customers who have never canceled service [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Dr. Stiroh only keeps customers who, by definition, rented an STB for a shorter period of time because they have both a start and end date within the limited time span of the existing data. This start- and end-point problem is a classic, well known and well-studied problem encountered in hazard models (models predicting when an ongoing event ends) and discussed in undergraduate and graduate econometrics and statistics textbooks.

76. [REDACTED]

[REDACTED]

[REDACTED]

¹⁴² Stiroh Report, p. 104. See also, Stiroh Report, ¶¶ 165, 201-203, 216, 224, 226, 240, 272-275, 279, 458, 463, and 492.

¹⁴³ This is approximately the last month for which Cablevision produced transactional data.

[REDACTED]

[REDACTED]

77.

[REDACTED]

Modes do not provide meaningful results for data that can take many values

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

78. In Tables 1 and 2, I revise Dr. Stiroh's analyses.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] The results show that only including subscribers with known start and end dates, as Dr. Stiroh's analysis does, understates the true period of time that an average customer rented an STB.

¹⁴⁴ See Stiroh Report Production.

¹⁴⁵ [REDACTED]



Sources:

Sources relied on in Figure 6 of the Stiroh Report.



Sources:
Sources relied on in Figure 7 of the Stiroh Report.

79. [REDACTED]

[REDACTED] 146

80. [REDACTED]

[REDACTED] This would not be true in a competitive world. In a competitive world, a used market for STBs could easily emerge much like the one in Canada.¹⁴⁷ Individuals could buy and sell used STBs on eBay or from other resellers. Typical and comparable consumer electronics markets such as the market for smart phones, computers, and modems all have fluid second-hand markets.

81. Finally, in the but-for world, Cablevision's subscribers would have the option to purchase STBs at the but-for competitive prices identified in the Hastings Report. In particular,

¹⁴⁶ Stiroh Report, p. 106, Figure 7.

¹⁴⁷ In Canada, there is an active resale market, captured both by Canadian consumer retail websites, such as Kajiji, see Deposition of Gerald Wall, Ph.D. (November 4, 2014), Deposition Exhibits 4-6, as well as by sales of refurbished STBs sold by Canadian MVPDs, see, e.g., Shaw Communications (July 1, 2007), "Hardware," available at <http://web.archive.org/web/20070701113033/http://www.shaw.ca/en-ca/ProductsServices/Television/Digital/Hardware.htm>; Shaw Communications (April 5, 2008), "Hardware," available at <http://web.archive.org/web/20080405202013/http://www.shaw.ca/en-ca/ProductsServices/Television/Digital/Hardware.htm>; Shaw Communications (January 6, 2009), "Hardware," available at <http://web.archive.org/web/20090106070026/http://www.shaw.ca/en-ca/ProductsServices/Television/Digital/Hardware.htm>; and Shaw Communications (March 29, 2013), "TV – Equipment," available at <http://web.archive.org/web/20130329045625/http://www.shaw.ca/television/equipment/>.

my NPV analysis correctly determines a competitive STB sales price, which is presented in the form of an equivalent competitive monthly rental rate. The analysis is independent of whether in the but-for world subscribers purchase or rent STBs.

82. Dr. Stiroh asserts that “the Canadian landscape refutes rather than supports” my analysis.¹⁴⁸ To support her claim, she compares STB rental rates in Canada to STB rental rates charged by Cablevision.¹⁴⁹ This is an inappropriate comparison. As I explained in the Hastings Report,¹⁵⁰ the rental market for STBs in Canada differs fundamentally from the rental market for STBs in the U.S. Therefore, STB rental rates in Canada do not provide relevant comparisons for the STB rental rates charged by Cablevision. For example, consider the market for automobiles. Consumers can purchase, lease long term with an option to purchase, or rent short term. Short-term rental prices per day, charged by firms such as Avis, Enterprise, and Hertz, are typically higher than the prices per day paid by consumers when they purchase or lease long term with an option to purchase. When consumers have the option to purchase the automobile, the relevant competitive market price is not the short-term rental rate but rather is the purchase price of the automobile at retail. For these reasons, Dr. Stiroh’s comparison of STB rental rates in Canada to STB rental rates charged by Cablevision is economically invalid. Customers still have the ability to purchase at a competitive price, and that competitive price disciplines prices in related markets catering to related but separate needs. In fact, both Dr. Stiroh and Dr. Wall acknowledge that STB rental rates in Canada are inherently different than Cablevision’s STB rental rates because consumers in Canada have the option to either purchase or rent.¹⁵¹

¹⁴⁸ Stiroh Report, p. 109. See also, Stiroh Report, ¶ 490 and footnote 907.

¹⁴⁹ Stiroh Report, ¶¶ 247-252.

¹⁵⁰ Hastings Report, ¶ 142.

¹⁵¹ Stiroh Report, ¶ 249. (“For example, in September 2014, Rogers Cable in Canada offered the following choice for its HD STB (the Netbox HD Terminal): (a) purchase for \$CDN 319.99, (b) lease-to own at \$CDN 7.50/month,

83. With respect to my analysis of STB prices in Canada, Dr. Stiroh argues that I have improperly assumed there is competition among STB suppliers in Canada.¹⁵² She cites Dr. Wall for the claim that MVPDs in Canada set the wholesale prices for STBs sold to retailers like Best Buy, and somehow this makes Canadian STB prices higher than would be if the market were competitive. What Dr. Stiroh fails to recognize is that, assuming *arguendo* that her claims are correct, the effect is to lower the estimated damages in my Robustness Analysis 1 (see Hastings Report, Section IV.B). That is, the less competitive is the Canadian STB market, the higher are the observed Canadian STB prices. Since damages in my Robustness Analysis 1 depend on the difference between (1) Cablevision's anticompetitively high STB prices and (2) Canadian STB prices, all else equal, higher Canadian STB prices result in lower damages. Suppose Dr. Stiroh's claim that I have overestimated the extent of competition in Canada were correct. Replacing the Canadian STB prices used in my analysis with lower, more competitive STB prices would cause the estimated damages in my Robustness Analysis 1 to increase.

84. Dr. Stiroh speculates that in the but-for world, [REDACTED]

[REDACTED].¹⁵³ [REDACTED]

Assuming that Dr. Stiroh's speculation has any economic merit, the issues raised are unrelated to the question of whether there exists a common methodology based on common evidence to determine if all or virtually all Class members suffered antitrust injury. That is, any such issues

with the option to purchase for \$CDN 1 after 36 months, or (c) lease at \$CDN 12.95/month. A consumer who wished to hold this STB for only twelve months might find it best to lease the STB at \$CDN 12.95/month and make a total payment of \$CDN 155.40. But a consumer who intends to hold on to the STB for a longer time might choose to purchase the STB and avoid the stream of payments.") Id. See also Deposition of Gerald Wall (November 4, 2014), 94:9–94:21.

¹⁵² Stiroh Report, ¶ 252. Dr. Stiroh repeats this argument at ¶ 463 and footnote 862.

¹⁵³ Stiroh Report, ¶¶ 253-257.

would be common to class members and would be addressed through specific values used in the NPV analysis. Dr. Stiroh's speculation has no implications for the merits of the NPV methodology itself.

85. Dr. Stiroh argues that "determining how subscribers would act in the but-for world requires individualized inquiries that preclude demonstrating class-wide impact."¹⁵⁴ [REDACTED]

[REDACTED]

[REDACTED] But which video packages Cablevision's subscribers select does not affect my antitrust injury and damages analysis. This follows because antitrust damages equal the total number of STBs rented by Class members multiplied by the difference between: (1) the price Class members paid to rent STBs in the actual world and (2) the competitive price that would have prevailed in the market but for Cablevision's tie. The video packages selected by Cablevision's subscribers do not affect this analysis. [REDACTED]

V.C. *Rebuttal to Dr. Stiroh's claim that individualized issues preclude proof of common impact even considering only STB rental rates*

86. Dr. Stiroh claims that "[REDACTED]

¹⁵⁴ Stiroh Report, p. 112. See also, Stiroh Report, ¶¶ 8, 212, 215, 225-227, 239, 258-270, and 422.

¹⁵⁵ Stiroh Report, ¶ 259.

¹⁵⁶ Stiroh Report, ¶ 260.

[REDACTED].¹⁵⁷ First, Dr. Stiroh's argument is wrong because she, again, has fundamentally misunderstood the but-for world. For the reasons discussed above, I correctly make no assumption as to whether Cablevision either sells or rents STBs in the but-for world. Moreover, in making this argument, Dr. Stiroh fails to account for the fact that the but-for world correctly removes Cablevision's ability to exercise market power in the tied product market.

87. [REDACTED]

[REDACTED]¹⁵⁸ Assuming that Cablevision's STB rental rates are anticompetitively high as a result of its tying policy, basic economic theory shows that STB manufacturers would capture some of the resulting profits from delegating retail price setting (of STB's) to a firm with substantial downstream market share (Cablevision), rather than to competitive downstream firms (e.g. BestBuy and other retailers in a competitive retail STB market).¹⁵⁹ [REDACTED]

[REDACTED].¹⁶⁰

88. Dr. Stiroh next asserts: "Dr. Hastings does not account for the fact that the impact, if any, on customers choosing to buy an STB would necessarily be different from the impact on customers choosing to lease an STB."¹⁶¹ Dr. Stiroh has misunderstood my analysis of antitrust injury and damages. My NPV analysis correctly determines a competitive STB sales price, which

¹⁵⁷ Stiroh Report, ¶ 273. See also, Stiroh Report, ¶¶ 165, 201-203, 216, 224, 226, 240, 272, 274-275, 279, 458, 463, and 492.

¹⁵⁸ Stiroh Report, ¶ 273, footnote 614.

¹⁵⁹ See, e.g., Katz, M. (1991), "Game-Playing Agents: Unobservable Contracts as Precommitments," *Rand Journal of Economics*, vol. 22, pp. 307-328; see also Rey, P. and Stiglitz, J. (1995), "The Role of Exclusive Territories in Producers' Competition," *Rand Journal of Economics*, vol. 26, pp. 431-451.

¹⁶⁰ CISCOAB00001011 (1/05): [REDACTED]

¹⁶¹ Stiroh Report, ¶ 273. See also, Stiroh Report, ¶¶ 169, 215, 220, 226, 239, 267, 467, and 469.

is presented in the form of an equivalent competitive monthly rental rate. The analysis is independent of whether in the but-for world subscribers purchase or rent STBs.

89. Finally, according to Dr. Stiroh, my report “assumes without basis that all customers would lease from Cablevision in the but-for world and would have made exactly the same choice as to STB type and duration of lease as before.”¹⁶² For the reasons explained above in Section IV.C, Dr. Stiroh is wrong—I do not make this assumption. Again, this argument stems from her fundamental misunderstanding of what characterizes a competitive market. The but-for competitive price does not depend on the identities of market participants or exactly which product each person picks. Rather, the but-for competitive price is determined by the fundamental principle that in a competitive market, firms cannot earn more than their opportunity cost. This is what characterizes the competitive market.

VI. REBUTTAL TO DR. STIROH’S CLAIM THAT CAUSATION CANNOT BE PROVEN USING COMMON METHODOLOGIES AND COMMON EVIDENCE

VI.A. *Rebuttal to Dr. Stiroh’s claim that the tie did not cause subscribers to rent STBs from Cablevision*

90. [REDACTED]

[REDACTED] Dr. Stiroh’s claim is refuted by the facts. A Cablevision subscriber who desired one-way functionality to Cablevision’s video packages could have rented a CableCARD instead of an STB. CableCARD rental rates are substantially lower than STB rental rates. [REDACTED]

¹⁶² Stiroh Report, ¶ 277.

¹⁶³ Stiroh Report, ¶ 287. See also, Stiroh Report ¶ 309.

[REDACTED]

91. Dr. Stiroh argues: “Crucially, one of the primary features that Cablevision-provided STBs provide is the ability to authenticate and decode encrypted television channels provided in Cablevision’s digital programming packages.”¹⁶⁵ The point she is attempting to make is that the ability to authenticate and decode encrypted channels is a reason separate from the TWS defined in my report to acquire an STB. However, Dr. Stiroh’s logic is wrong because the logical claim in a tying case is that in order to access the tying product that customer must purchase the tied product. Dr. Stiroh’s point that the STB (the tied product) may be used for purposes other than accessing the tying product is irrelevant for purposes of analyzing a tying claim.

92. In addition, I understand that the Court has stated: “Since this Court finds that Plaintiffs have sufficiently pled facts regarding a *per se* tying violation, the requisite elements generally required for proving a tying violation under a rule of reason analysis—causation of antitrust injury and rebutting procompetitive justifications for a tie-in—need not be assessed at this stage.”¹⁶⁶

¹⁶⁴ Hastings Report, ¶ 60.

¹⁶⁵ Stiroh Report, ¶ 283.

¹⁶⁶As the Court stated: “Since this Court finds that Plaintiffs have sufficiently pled facts regarding a *per se* tying violation, the requisite elements generally required for proving a tying violation under rule of reason analysis – causation of antitrust injury and rebutting procompetitive justifications for a tie in – need not be assessed at this stage.” With regard to causation of antitrust injury, the Court described it as “a viable theory of causation of antitrust injury in that a defendant’s alleged tying resulted in anticompetitive effects (e.g., through the forced purchase of inferior goods, consumer surprise, difficulty in consumer ability to make price comparisons, or foreclosure of the tied product market). . . .” *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *21 (D.N.J. January 9, 2012).

VI.B. *Rebuttal to Dr. Stiroh's claim that causation cannot be proven using common evidence*

93. Dr. Stiroh asserts: “many of Cablevision’s interactive services can be accessed through means other than STBs leased from Cablevision.”¹⁶⁷ Dr. Stiroh is incorrect. I define TWS to “include services available and accessible to a subscriber through a remote control via two-way, interactive communication with Cablevision. These services include (1) the interactive program guide (‘IPG’); (2) the ability to order pay-per-view (‘PPV’) events using a remote control; (3) Video on Demand (‘VOD’); and (4) iO Games.”¹⁶⁸ Access to the combination of the interactive services described above through a remote control is not available by any means other than STBs rented from Cablevision.

94. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁶⁷ Stiroh Report, ¶ 286. See also, Stiroh Report, ¶¶ 18, 34-41, 80, 100 and 305-307.

¹⁶⁸ Hastings Report, ¶ 5.

¹⁶⁹ Stiroh Report, ¶ 293. See also, Stiroh Report, ¶¶ 308-312.

¹⁷⁰ Stiroh Report, ¶ 296.

¹⁷¹ Stiroh Report, ¶ 293.

95. Again, Dr. Stiroh has the logic wrong. The logical claim in a tying case is that, in order to access the tying product, the customer must purchase the tied product. Dr. Stiroh's point that the tied product may be used for purposes other than accessing the tying product is irrelevant in terms analyzing a tying claim.

96. Dr. Stiroh next claims that "an individual class member's demand for interactive services cannot be determined using common evidence."¹⁷² [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

97. Dr. Stiroh has confused *access* to TWS with the varying *usage* of certain components of TWS. Cablevision's TWS (IPG, PPV, VOD, and iO Games) are not available separately. A customer who wanted access to the IPG via remote would also receive access to PPV, VOD, and iO Games via remote. A subscriber's usage of specific TWS components is irrelevant to my analysis of antitrust injury and damages because the tie depends on access to the TWS—not usage of the TWS, e.g., how often a subscriber uses the IPG or purchases a PPV movie.

98. In addition, Dr. Stiroh pointedly does not report usage statistics for the IPG. [REDACTED]

[REDACTED]

[REDACTED]

¹⁷² Stiroh Report, p. 128.

¹⁷³ Stiroh Report, ¶ 300. Dr. Stiroh makes the same point later in her report, see ¶ 381.

¹⁷⁴ Stiroh Report, ¶ 300.

¹⁷⁵ CVC-Marchese-03464421 at 430.

[REDACTED]

99. In sum, Dr. Stiroh's claim that "an individual class member's demand for interactive services cannot be determined using common evidence"¹⁷⁷ is (1) unrelated to the economic analysis of the tie (because that analysis depends on access rather than usage) and (2) raises no individualized issues (because the methodologies and evidence used are common to Class members).

VII. REBUTTAL TO DR. STIROH'S CLAIM THAT MARKET POWER CANNOT BE PROVEN USING COMMON METHODOLOGIES AND COMMON EVIDENCE

VII.A. *Rebuttal to Dr. Stiroh's alleged multiple geographic tying markets*

100. Dr. Stiroh disputes my conclusion that common evidence establishes the relevant geographic market as Cablevision's Tri-State Footprint.¹⁷⁸ Even assuming her arguments made economic sense, which they do not, they do not raise any class issues. That is, the same common economic methodology and common economic evidence used in my report could be used to define two geographic markets, i.e., with and without Verizon's FiOS service.¹⁷⁹ The methodology and

¹⁷⁶ CVC-Marchese-03464421 at 479.

¹⁷⁷ Stiroh Report, p. 128.

¹⁷⁸ Stiroh Report, Section VIII.A.

¹⁷⁹ Hastings Report, ¶86. Dr. Stiroh makes no argument that smaller geographic markets should be defined because of the competitive effects of satellite providers. [REDACTED]

evidence required to define those two geographic markets would not vary among members of the two respective classes. Defining the relevant geographic market as Cablevision's Tri-State Footprint or as two geographic markets, i.e., with and without Verizon's FiOS service, is capable of proof through evidence common to the class.

101. In addition, in a cable industry tying case involving essentially identical issues regarding definition of the relevant geographic market, the Court in *Cox* rejected the argument that more than one geographic market should be defined in the Oklahoma City area. As the Court stated:

The Court finds that the relevant geographic market is Cox's Oklahoma City "subsystem" and that this determination can be made with proof common to the class. That geographic area corresponds to the commercial realities of the MVPD industry and is economically significant. Brown Shoe Co., 370 U.S. at 336-37. The area cannot be divided into smaller regions as suggested by Defendant without losing touch with the realities of competition faced by Defendant from the other providers of MVPD. To attempt to create geographic markets based on zip code, as suggested by Defendant's expert at the hearing, would ignore the commercial realities of the actions of Defendant and its competitors in the market. Defendant offered no proof that either it or any competitor considered an area smaller than Cox's Oklahoma City "subsystem" as economically feasible to target.¹⁸⁰

102. In addition, I understand that the Court has stated: "For *per se* claims, 'plaintiffs need not establish a geographic market.'"¹⁸¹

103. [REDACTED]

[REDACTED]

[REDACTED]

¹⁸⁰ *In re: Cox Enterprises, Inc., Set-Top Cable Television Box Antitrust Litigation*, Memorandum Opinion and Order, pp. 22-23 (January 9, 2014).

¹⁸¹ *Marchese v. Cablevision Systems Corp.*, No. 10-2190 (JLL), 2012 WL 78205, *3 (D.N.J. January 9, 2012).

¹⁸² Hastings Report, Section III.A.3.

[REDACTED]

[REDACTED]

104. In sum, although Dr. Stiroh's claim that more than one geographic market must be defined is incorrect, I will for completeness discuss her five critiques.

105. [REDACTED]

¹⁸³ CVC-Marchese-03517303 at slide 2.

¹⁸⁴ Hastings Report, footnote 151.

¹⁸⁵ Stiroh Report, ¶¶ 321-326.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

106.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

107.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁸⁶ Stiroh Report, ¶¶ 327-336.

[REDACTED]

108. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

109. [REDACTED]

[REDACTED] This is hardly surprising. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (see Hastings Report, ¶ 91).

110. Dr. Stiroh claims that my testimony in *Cox* somehow implies that the existence of the Tri-State Footprint as the relevant geographic market cannot be shown by common proof.¹⁸⁹

¹⁸⁷ Stiroh Report, ¶¶ 337-340.

¹⁸⁸ Stiroh Report, ¶¶ 341-347.

¹⁸⁹ Stiroh Report, ¶ 342.

Dr. Stiroh is wrong. Both I and the Court reviewed and relied on Cox's business documents, as well as documents from AT&T, in reaching the conclusion that, in the Court's words: "the relevant geographic market is Cox's Oklahoma City 'subsystem' and that this determination can be made with proof common to the class."¹⁹⁰

111. *FiOS and U-verse are allegedly not potential entrants throughout the Tri-State Footprint.* In her final argument regarding the scope of the geographic market, Dr. Stiroh states: "Dr. Hastings nonetheless concludes that Verizon and AT&T could easily expand anywhere in Cablevision's footprint. This conclusion is simply at odds with industry facts, which negate Dr. Hastings' contention that Cablevision faces the same competitive constraints throughout its footprint, regardless of geography." In fact, Dr. Stiroh's claim is at odds with Cablevision's view of the market:

We face intense competition from two incumbent telephone companies. Verizon and AT&T Inc., which offer video programming in addition to their voice and high-speed Internet access services to residential customers in our service area, compete across all of our telecommunications products. Verizon has made promotional offers to customers in our service area and we expect that they may make additional promotional offers in the future. *The attractive demographics of our service territory make this region a desirable location for investment in video distribution technologies by these companies. Their competitive position has been improved by recent operational, regulatory and legislative advances that they have made.* For example, Verizon has constructed fiber to the home network plant that passes a significant number of households in our service area (currently about one-third of the households according to our estimates). *Verizon has obtained authority to provide video service (it already has or needs no authority to provide phone and data services) for a majority of these homes passed, on a statewide basis in New Jersey and through numerous local franchises in New York.* In July 2008, the New York Public Service Commission granted regulatory approval for Verizon to provide cable television service to all of New York City. Verizon has so far not

¹⁹⁰ *In re: Cox Enterprises, Inc., Set-Top Cable Television Box Antitrust Litigation*, Memorandum Opinion and Order, p. 22 (January 9, 2014).

indicated any plans to offer video service in Connecticut. AT&T offers video service in competition with us in most of our Connecticut service area.¹⁹¹

112. Cablevision's 2012 10-K further undermines Dr. Stiroh's claim:

We face intense competition in the New York metropolitan service area from two incumbent telephone companies. Verizon Communications, Inc. ('Verizon') and AT&T Inc. ('AT&T'), which offer video programming in addition to their voice and high-speed Internet access services to residential customers in this service area, compete across all of our telecommunications products. Verizon and AT&T have made and may continue to make promotional offers to customers in our New York metropolitan service area at prices lower than ours. The attractive demographics of our service territory make this region a desirable location for investment in video distribution technologies by these companies. Verizon has constructed fiber to the home network plant that passes a significant number of households in our service area. Verizon does not publicly report the extent of their build-out or penetration by area. We estimate that Verizon is currently able to sell a fiber-based video service to at least half of the households in our service area. Verizon's build out and video sales activity in our service area is difficult to assess because it is based upon visual inspections and other limited estimating techniques, and therefore our estimate serves only as an approximation. *Verizon has also built its fiber network to areas where we believe it is not currently able to sell its fiber-based video service. Accordingly, Verizon may increase the number of customers in our service area to whom it is able to sell video in the future.* AT&T (which recently entered into an agreement to sell its Connecticut operation to Frontier Communications) offers video service in competition with us in most of our Connecticut service area. Verizon and AT&T also market direct broadcast satellite ("DBS") services in our service area. This competition with Verizon and AT&T negatively impacts our video revenue in these areas and will continue to do so in the future. Each of these companies has significantly greater financial resources than we do.¹⁹²

113. [REDACTED]

[REDACTED]

¹⁹¹ Cablevision 10-K, 2008, p. 12 (emphasis added).

¹⁹² Cablevision 10-K, 2012, p. 10 (emphasis added).

¹⁹³ See CVC-Marchese-00424475 and CVC-Marchese-00472291. (The documents project homes passed by FiOS in Cablevision's Tri-State Footprint for future years.)

VII.B. *Rebuttal to Dr. Stiroh's claim that my report presents a flawed approach to defining the tying product market*

114. Dr. Stiroh claims: “As a preliminary matter, in her structural approach to market power, Dr. Hastings equates the competitive position of digital video packages with ‘Two Way Services’—the shares Dr. Hastings estimates for ‘Two Way Services’ are identical to those she estimates for digital video packages.” Dr. Stiroh is wrong. The shares for TWS differ from the shares for digital video packages because the latter shares include Cablevision subscribers using CableCARDS whereas the former shares do not [REDACTED]

115. These facts also show that Dr. Stiroh’s complaints regarding my analysis of the relevant product market are without merit. As discussed in my report, the Court found in its Opinion dated January 9, 2012 that Plaintiffs allegations stated a claim under Sherman Act, 15 U.S.C. § 1, and “The Court finds these alleged facts to be sufficient for establishing a ‘cluster’ product market of Two Way Services in that the combination of interactive services provided is a combination reflective of the commercial realities in the industry of MVPDs creating a distinct line of commerce.”¹⁹⁴ [REDACTED]

¹⁹⁴ *Marchese v. Cablevision Systems Corp.*, No. 10–2190 (JLL), 2012 WL 78205, *11 (D.N.J. January 9, 2012).

¹⁹⁵ Stiroh Report, ¶ 369.

116. With respect to Cablevision's market share of digital video packages (shown in Table 5 of the Hastings Report), Dr. Stiroh complains that it excludes brick-and-mortar stores and OVD suppliers.¹⁹⁶ [REDACTED]

117. Finally, my economic analysis of the relevant tying and tied product markets, as well as Cablevision's ability to exercise market power in the tying market, rely on economic evidence common to the Class and utilize common, well-accepted economic methodologies. The methodologies used do not vary amongst Class members. In other words, if the economic analysis used here to define the relevant markets and measure Cablevision's market power in the tying market lead to specific conclusions from the perspective of one member of the Class, those same conclusions would hold for all or nearly all members of the proposed Class.

VII.C. *Rebuttal to Dr. Stiroh's claims regarding the direct evidence of Cablevision's market power tying market*

118. [REDACTED]

[REDACTED] Dr. Stiroh is wrong. [REDACTED]

¹⁹⁶ Stiroh Report, ¶¶ 381-393.

¹⁹⁷ See, e.g., CVC-Marchese-00468640 and CVC-Marchese-01781739 at 740.

¹⁹⁸ Stiroh Report, ¶¶ 395-399.

[REDACTED]

[REDACTED]

[REDACTED] For price discrimination to succeed, a firm must possess some market power.¹⁹⁹

119. [REDACTED]

[REDACTED]

[REDACTED] I disagree. Although firms operating in a highly competitive market may be able to engage in some degree of price discrimination, [REDACTED]

[REDACTED]

[REDACTED].

120. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁹⁹ Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 308.

²⁰⁰ Stiroh Report, ¶ 396.

²⁰¹ Stiroh Report, ¶ 398.

²⁰² Stiroh Report, ¶ 398.

²⁰³ Stiroh Report, ¶ 398.

²⁰⁴ D_VIDEO_TIER, D_UVERSE_ZIPCODE_STATUS, D_DATA_FIOS_STATUS, NFOV_CUSTMASTER_HISTORY, NFOV_CUSTRATES_HISTORY, NFOV_CUSTRATES_DETAIL; CVC-Marchese-00403729.xls; CVC-Marchese-00403730.xls.

121. Finally, Dr. Stiroh asserts: “It is inappropriate to conclude that price discrimination exists, let alone that it shows market power, by looking at only part of what two subscribers pay, rather than the total amounts each pays.”²⁰⁵ [REDACTED]

[REDACTED]. As explained in Sections IV.C and IV.D above, Dr. Stiroh is wrong. In addition, as demonstrated in Section II.C of the Hastings Report, the tying and tied products are separate, i.e., TWS are not reasonably interchangeable with STBs. Dr. Stiroh never addresses, much less rebuts, this basic finding.

VII.D. *Rebuttal to Dr. Stiroh’s claim that my report presents a flawed approach to defining the tied product market*

122. Dr. Stiroh asserts that the tied product market should include STBs provided by AT&T for use with its U-verse service,²⁰⁶ Verizon for use with its FiOS service,²⁰⁷ and “STBs such as TiVo, Apple TV, Roku, Boxee, Amazon Fire, LG Blu-Ray, and Google Chromecast, each of which can access one or multiple interactive services. . . .”²⁰⁸ Dr. Stiroh is wrong. The tied product market consists of STBs that can be used to access Cablevision’s TWS. But as demonstrated in my report, Cablevision conditions the provision of TWS on the rental of an STB from Cablevision.²⁰⁹ Therefore, as a commercial reality, the only product that can access Cablevision’s TWS is an STB rented from Cablevision.

123. My report demonstrates that Cablevision exercises substantial market power in the tied product market. Figures 1 through 4 in my report (shown below for convenience in Figures 3

²⁰⁵ Stiroh Report, ¶ 399.

²⁰⁶ Stiroh Report, ¶ 403.

²⁰⁷ Stiroh Report, ¶ 403.

²⁰⁸ Stiroh Report, ¶ 405.

²⁰⁹ See CVC-Marchese-00609565 at 568; CVC-Marchese-03255611 at 611; CVC-Marchese-00319929 at 929; Deposition of Stephanie Reina (May 2, 2014), 162:15-21; CVC-Marchese-03536293 at 300; Deposition of James Nuzzo (May 7, 2014), 62:5-8.

through 6) show the rental rates that Cablevision charges to its customers for STBs as well as Cablevision's acquisition costs for the rented STBs. The acquisition costs are shown in the left-hand-side panel in each of the figures. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

²¹⁰ [REDACTED] See Deposition of James Nuzzo (May 7, 2014), 204:10–14; CVC-Marchese-03504508 at 511; CVC-Marchese-03554587 at 588. See also Deposition of Gerald Wall (November 4, 2014), 28:8–29:6 [REDACTED] Id.

²¹¹ In a competitive market, a firm's equilibrium price equals its marginal cost. See Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, p. 58-59. Thus, if marginal cost decreases, the firm's price correspondingly decreases.

²¹² Generally, there are four main types of STBs: HD, HD DVR, SD, and SD DVR. HD is "high definition." SD is "standard definition." DVR is a "digital video recorder."

²¹³ For reasons described in Section III.A.2 of the Hastings Report, I add the DVR service fee to the STB rental rate to get the true rental rate for a DVR STB.

124. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

125. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Dr.

Stiroh is wrong. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Moreover, Dr. Stiroh's assertion that "this price [i.e., Cablevision's STB rental rates] must be compared to a price that would have prevailed but for the alleged market power" is consistent with my antitrust injury and damages analysis which compares Cablevision's actual STB rental rates with the rates that would have prevailed but for the alleged anticompetitive tying conduct. [REDACTED]

[REDACTED]

[REDACTED] r.²¹⁵

126. [REDACTED]

[REDACTED]

²¹⁴ Stiroh Report, ¶ 408.

²¹⁵ See, e.g., Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, chapter 2.

²¹⁶ Stiroh Report, ¶ 408.

[REDACTED]

[REDACTED]

[REDACTED] A firm's marginal cost of supplying a given product equals the change in its total cost of supplying that product when its output changes by a small (literally infinitesimal) amount. [REDACTED]

[REDACTED]

[REDACTED] Conversely, Cablevision's STB acquisition costs are marginal costs since each additional STB supplied by Cablevision requires the firm to acquire one more STB from its suppliers.

127. Finally, Dr. Stiroh asserts: [REDACTED]

[REDACTED]."²¹⁷ Again, her statement is a straw man—[REDACTED]

[REDACTED] . [REDACTED]

[REDACTED]

[REDACTED]

VIII. REBUTTAL TO DR. STIROH'S CLAIM THAT DAMAGES CANNOT BE SHOWN WITH METHODOLOGIES AND EVIDENCE COMMON TO THE CLASS

128. My report demonstrates that there exist common, well-accepted methodologies and common evidence that can be used reliably to estimate classwide damages. From an economic perspective, antitrust damages equal the total number of STBs rented by Class members multiplied by the difference between: (1) the price Class members paid to rent STBs in the actual world and (2) the competitive price that would have prevailed in the market but for Cablevision's tie. I use

²¹⁷ Stiroh Report, ¶ 409.

the well-accepted NPV methodology to estimate classwide damages based on the well-established economic principles of competition and opportunity costs. I do this for four specific types of STBs: SD, HD, SD/DVR, and HD/DVR. The economic evidence used in applying the NPV methodology is common to the class.

129. Dr. Stiroh offers several criticisms of my damages model. Her criticisms do not raise class issues because even assuming, *arguendo*, they had economic merit (which they do not), they would be addressed using common methodologies and common evidence.

130. *Including DVR fees.* Dr. Stiroh claims that I incorrectly include “fees for DVR service, which have nothing to do with the services that Plaintiffs have identified are at issue in this case.”²¹⁸ Dr. Stiroh is incorrect. DVR service fees are paid when DVR STBs are rented to access the TWS. As stated in my prior report:

[REDACTED]

131. Dr. Stiroh claims that the DVR service fee should not be included as part of the rental fee for DVR STBs. As evident in her report, Dr. Stiroh is well aware of a class certification hearing “relating to an alleged tie of cable STBs in the Oklahoma City area (*In re: Cox Enterprises*,

²¹⁸ Stiroh Report, ¶ 411. Dr. Stiroh repeats this point at ¶¶ 445-457.

²¹⁹ Hastings Report, ¶ 73.

²²⁰ Hastings Report, ¶ 47, footnote omitted.

Inc. Set-top Cable Television Box Antitrust Litigation (“Cox”).²²¹ However, Dr. Stiroh ignores the Court’s ruling regarding the DVR service fee. In *Cox*, the Court found:

Defendant next challenges Dr. Hastings’ consideration of rental rates and costs for HD DVR services and HD television. . . . After consideration, the Court finds Plaintiffs’ position well supported. While the nationwide Plaintiffs may have posited a different anti-trust claim, or raised arguments of differing tied or tying products, nothing forces Plaintiff here to adhere to those arguments. *Defendant’s arguments regarding the inclusion of the DVR service fees likewise fail. The literature from Cox clearly indicates that if the customer wishes to subscribe to DVR service, the fee is required. Thus, that fee may well be considered part and parcel of the rental fee for the HD DVR STB and clearly fits within the scope of Plaintiffs’ antitrust claims.*²²²

132. With respect to DVR charges, Dr. Stiroh also argues: [REDACTED]

[REDACTED]

[REDACTED]²²³ Dr. Stiroh’s point is misleading. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

²²¹ Stiroh Report, ¶ 179.

²²² *In re: Cox Enterprises, Inc. Set-top Cable Television Box Antitrust Litigation*, Memorandum Opinion and Order (January 9, 2014), pp. 5-6 (emphasis added).

²²³ Stiroh Report, ¶ 450.

²²⁴ See Deposition of Brad Feldman (March 14, 2014), 62:16–18, quote from a Cablevision email [REDACTED]

See CVC-Marchese-01830211 at 211

CVC-Marchese-01054849 at 85

see also id. at 855



Sources:
Cablevision database:
NFOV_BOXINVENTORY_HISTORY,
NFOV_CUSTRATES_HISTORY,
NFOV_CUSTRATES_DETAIL; CVC-
Marchese-
00403729.xls; CVC-Marchese-
00403730.xls.

^{/1} Cablevision launched DVR service in
November 2004.

VIII.A. *Rebuttal to Dr. Stiroh's overview of my damages analysis*

133. Dr. Stiroh states that I incorrectly apply STB repair percentages and repair costs “uniformly to all STB models of a given type for the entire class period.”²²⁵ Dr. Stiroh fails to understand the difference between (1) the NPV methodology underlying my damages analyses

²²⁵ Stiroh Report, ¶ 414.

and (2) the use in applying the NPV methodology of specific values obtained from Cablevision's documents. Specific values used in the damages analysis, e.g. STB repair percentages and repair costs, could be altered with no change to the damages methodology. My damage analysis would still rely on a common methodology using common evidence to determine common impact.

VIII.B. *Rebuttal to Dr. Stiroh's claim that my damages analysis cannot establish class-wide damages even ignoring her "reoptimization" argument*

134. Dr. Stiroh claims that my damages models cannot "establish that all class members were harmed by the alleged conduct throughout the alleged class period."²²⁶ [REDACTED]

[REDACTED] But this does not raise any class issues because (1) the NPV damages methodology is common to the Class; (2) the economic evidence used in the damages analysis is common to the Class; and (3) identifying Class members not harmed in a given month is readily ascertainable with Cablevision's data.

135. If Dr. Stiroh is asserting that all Class members must be harmed in each month of the class period, that claim would make no economic sense. Suppose a firm that engaged in exclusionary conduct were able to offset damages from its illegal conduct by periodically offering price discounts. The deterrent effect of damages would be substantially vitiated, thus harming consumer welfare and circumventing the intended effects of antitrust law in the first instance.

136. Dr. Stiroh criticizes my use of STB list rental rates in the damages analysis.²²⁷ Her criticism does not raise any class issues because (1) the NPV damages methodology is common to the Class; (2) the economic evidence used in the damages analysis, e.g., list or transactional rental rates for STBs, is common to the Class; and (3) the damages model can use as inputs the

²²⁶ Stiroh Report, ¶ 433.

²²⁷ Stiroh Report, ¶ 436. Dr. Stiroh repeats this common in ¶ 411.

transactions rental rates with no change to the NPV methodology. That is, the specific values used in the damages analysis, e.g. STB prices, could be altered with no change to the damages methodology. My damage analysis would still rely on a common methodology using common evidence to determine common impact.

137. [REDACTED]

[REDACTED] Again, her criticism does not raise any class issues because (1) the NPV damages methodology is common to the Class; (2) the economic evidence used in the damages analysis, e.g., including or excluding bulk residential customers and commercial customers, is common to the Class; and (3) the damages model can use as inputs bulk residential customers and commercial customers with no change to the NPV methodology. [REDACTED]

[REDACTED]

²²⁸ Stiroh Report, ¶ 444, footnote 828.



138. Dr. Stiroh states that the “zero economic profit assumption is a theoretical construct used in economic modeling.”²²⁹ Dr. Stiroh here refers to the appropriate discount rate to be used in the damages analysis. Dr. Stiroh does not dispute that competitive firms earn zero economic profits. At the but-for competitive price, competitive firms would earn their opportunity costs, which would yield them zero economic profits. Moreover, her criticism does not raise any class issues because (1) the NPV damages methodology is common to the Class; (2) the economic evidence used in the damages analysis, e.g., the discount rate, is common to the Class; and (3) the damages model can use alternative discount rates with no change to the NPV methodology.

²²⁹ Stiroh Report, ¶¶ 477-482.

139. Dr. Stiroh criticizes my damage analysis because she claims that I fail to “include relevant costs.”²³⁰ In particular, Dr. Stiroh criticizes the exclusion of installation costs in my damages analysis.²³¹ I did not include installation costs in my damages analysis because in the but-for world Cablevision subscribers could install their own STBs. Nevertheless, the specific values used in the damages analysis, e.g. installation costs, could be altered with no change to the damages methodology. My damage analysis would still rely on a common methodology using common evidence to determine common impact. [REDACTED]

[REDACTED]

VIII.C. *Rebuttal to Dr. Stiroh’s claim that my damages model is unreliable for additional reasons*

140. Dr. Stiroh asserts: “As there is no allegation that Verizon is able to charge supra-competitive prices for its STBs, the real-world facts do not support the predictions of Dr. Hastings’ Primary Damages Model.”²³² Dr. Stiroh’s flawed logic is as follows:

- There is no allegation that Verizon is able to charge supra-competitive rental rates for its STBs.
- Therefore, Verizon’s rental rates must be competitive.

141. Logically, however, the absence of an allegation does not mean that anticompetitive conduct did not occur. Moreover, even assuming, *arguendo*, that Verizon did have the ability to charge supra-competitive prices for its STBs, the standard models of “umbrella pricing”²³³ and “price leadership”²³⁴ would be consistent with such rental rates.

²³⁰ Stiroh Report, ¶ 483.

²³¹ Stiroh Report, ¶ 485.

²³² Stiroh Report, ¶ 472.

²³³ See, e.g., Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley, chapter 4.

²³⁴ See, e.g., Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill, pp. 349-350.

142. Dr. Stiroh claims: “In addition, Dr. Hastings’ Primary Damages Model predicts but-for prices for STBs below those of CableCARDs, which Plaintiffs have not asserted to be anticompetitively priced.”²³⁵ Here Dr. Stiroh conflates actual and but-for worlds and misleadingly compares STB prices in the *but-for* world to CableCARD prices in the *actual* world. She is incorrectly comparing prices of two different products in two different worlds.

143. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

²³⁵ Stiroh Report, ¶ 473.

²³⁶ Stiroh Report, ¶ 474, footnotes omitted.

²³⁷ [REDACTED]. See Deposition of James Nuzzo (May 7, 2014), 204:10–14; CVC-Marchese-03504508 at 511; CVC-Marchese-03554587 at 588.

144. Dr. Stiroh repeatedly mentions multi-room DVR, also known as DVR Plus.²³⁸ Dr. Stiroh's discussion of multi-room DVR service is irrelevant because, as explained in my prior report, I do not calculate damages for multi-room DVR service.²³⁹

145. [REDACTED]

146. [REDACTED]

VIII.D. *Dr. Stiroh claims that "Dr. Hastings' model cannot account for Cablevision's defenses to certain subscribers' claims"*

147. Dr. Stiroh states that "Dr. Hastings' Models Do Not Allow for Litigation of the Filed Rate Doctrine Defense."²⁴² My understanding is that this is a legal issue. I can exclude these

²³⁸ Stiroh Report, ¶ 482 and footnote 889.

²³⁹ Hastings Report, footnote 69.

²⁴⁰ Stiroh Report, ¶ 125.

²⁴¹ Deposition of Brad Feldman (March 14, 2014), Deposition Exhibit 11; see also CVC-Marchese-03272430.

²⁴² Stiroh Report, ¶¶ 501-505.

areas if the Court held that the filed-rate doctrine ruled out damages in rate-regulated areas. Dr. Stiroh states that “Dr. Hastings’ Model Cannot Account for Subscribers Who Waived Their Right to Litigate and/or Participate in a Class Action.”²⁴³ Again, my understanding is that this is a legal issue. I can exclude these subscribers if the Court held that the arbitration clause was binding.

²⁴³ Stiroh Report, ¶¶ 506-510.

November 21, 2014



Justine S. Hastings, Ph.D.

APPENDIX I: DOCUMENTS CONSIDERED

Expert Reports and Depositions

Deposition of Brad Feldman and all exhibits (March 14, 2014)
Deposition of Gary Schanman and all exhibits (February 28, 2014)
Deposition of Gerald Wall, Ph.D. and all exhibits (November 4, 2014)
Deposition of James Nuzzo and all exhibits (May 7, 2014)
Deposition of Justine S. Hastings, Ph.D. and all exhibits (September 23, 2014)
Deposition of Kristin Dolan and all exhibits (April 8, 2014)
Deposition of Stephanie Reina and all exhibits (May 2, 2014)
Expert Report of Gerry W. Wall, Ph.D. (October 8, 2014)
Expert Report of Justine S. Hastings, Ph.D. (August 15, 2014)
Expert Report of Lauren J. Stiroh, Ph.D. (October 8, 2014)

Academic Articles/Books/Research

ABA Section of Antitrust Law (2012), *Annual Review of Antitrust Law Developments*
Carlton, D. and Perloff, J. (2005), *Modern Industrial Organization*, 4th ed., Boston, MA: Pearson Addison Wesley
Carlton, D. and Waldman, M. (2002), “The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries,” *Rand Journal of Economics*, vol. 33(2), pp. 194-220
Church, J. and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, Boston, MA: Irwin McGraw-Hill,
Elhauge, E. (2009), “Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory,” *Harvard Law Review*, vol. 123(2), pp. 397-481
Katz, M. (1991), “Game-Playing Agents: Unobservable Contracts as Precommitments,” *Rand Journal of Economics*, vol. 22, pp. 307-328
Rey, P. and Stiglitz, J. (1995), “The Role of Exclusive Territories in Producers’ Competition,” *Rand Journal of Economics*, vol. 26, pp. 431-451
Whinston, M. (1990), “Tying, Foreclosure, and Exclusion,” *American Economic Review*, vol. 80(4), pp. 837-859

Legal Documents

In re: Cox Enterprises, Inc., Set-Top Cable Television Box Antitrust Litigation, Memorandum Opinion and Order (January 9, 2014)
Marchese v. Cablevision Systems Corp., No. 10–2190 (JLL) (CCC), Fifth Amended Class Complaint (D.N.J. October 1, 2013)

Marchese v. Cablevision Systems Corp., No. 10–2190 (JLL), 2012 WL 78205, (D.N.J. January 9, 2012)

Public Information

Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2008)

Cablevision Systems Corporation and CSC Holdings, LLC, Form 10-K (December 31, 2012)

<http://ir.rovicorp.com/Mobile/file.aspx?IID=4206196&FID=10750252>

<http://ir.rovicorp.com/Mobile/file.aspx?IID=4206196&FID=13484732>

http://optimum.custhelp.com/app/answers/detail/a_id/2694/kw/optimum%20app

http://optimum.custhelp.com/app/answers/detail/a_id/2754/kw/optimum%20app

http://optimum.custhelp.com/app/answers/detail/a_id/2838/kw/optimum%20app

http://optimum.custhelp.com/app/answers/detail/a_id/2889/kw/optimum%20app

http://optimum.custhelp.com/app/answers/detail/a_id/651

<http://web.archive.org/web/20070701113033/http://www.shaw.ca/en-ca/ProductsServices/Television/Digital/Hardware.htm>

<http://web.archive.org/web/20080405202013/http://www.shaw.ca/en-ca/ProductsServices/Television/Digital/Hardware.htm>

<http://web.archive.org/web/20090106070026/http://www.shaw.ca/en-ca/ProductsServices/Television/Digital/Hardware.htm>

<http://web.archive.org/web/20130329045625/http://www.shaw.ca/television/equipment/>

http://web.archive.org/web/20130723065842/http://www.rogers.com/web/Rogers.portal?_nfpb=true&_pageLabel=cable_hardware_page

<http://www.cablevision.com/>

<http://www.optimum.com/digital-cable-tv/cable-tv-app/>

http://www.rogers.com/web/Rogers.portal?_nfpb=true&_pageLabel=cable_hardware_page

http://www.rogers.com/web/Rogers.portal?_nfpb=true&_pageLabel=PTV_Landing&cm_mmc=Redirects_-_Cable_Eng_-_PTV_0309_-_tv

<http://www.shaw.ca/gateway/>

<http://www.telus.com/en/ab/tv/hardware.jsp?INTCMP=TVRiverflowHardwarePVR>

<http://www.wolframalpha.com/input/?i=number+of+atoms+in+the+universe>

<https://www.optimum.net/pages/Terms/Optimum-App.html>

Kramer, S., “Updated: Cablevision Launches Optimum for iPad: 300 Channels and VOD,” Gigaom (April 2, 2011), available at <https://gigaom.com/2011/04/02/419-cablevision-launches-optimum-for-ipad-300-channels-and-vod/> (accessed November 13, 2014)

Wolfe, B., "Cablevision Launches Streaming App For iPad; Legal Fight Likely," AppAdvice(April 2, 2011), available at <http://appadvice.com/appnn/2011/04/cablevision-joins-battle-networks-release-optimum-ipad-app> (accessed November 13, 2014)

Cablevision Database:

D_DATA_FIOS_STATUS

D_UVERSE_ZIPCODE_STATUS

D_VIDEO_TIER

NFOV_BOXINVENTORY_HISTORY

NFOV_CUSTMASTER_HISTORY

NFOV_CUSTRATES_DETAIL

NFOV_CUSTRATES_HISTORY

Procured Documents

1282_001

CISCOAB00001011

CVC-Marchese-00032194

CVC-Marchese-00032201

CVC-Marchese-00032203

CVC-Marchese-00032277

CVC-Marchese-00032356

CVC-Marchese-00032359

CVC-Marchese-00032362

CVC-Marchese-00032371

CVC-Marchese-00032382

CVC-Marchese-00032390

CVC-Marchese-00032401

CVC-Marchese-00032412

CVC-Marchese-00058037

CVC-Marchese-00058233

CVC-Marchese-00058287

CVC-Marchese-00058299

CVC-Marchese-00058427
CVC-Marchese-00058429
CVC-Marchese-00058878
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CVC-Marchese-00058898
CVC-Marchese-00058914
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CVC-Marchese-00058990
CVC-Marchese-00059014
CVC-Marchese-00059896
CVC-Marchese-00059952
CVC-Marchese-00060002
CVC-Marchese-00060014
CVC-Marchese-00060038
CVC-Marchese-00060074
CVC-Marchese-00060080
CVC-Marchese-00060108
CVC-Marchese-00060112
CVC-Marchese-00060114
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CVC-Marchese-00060642
CVC-Marchese-00060654
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CVC-Marchese-00061017

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CVC-Marchese-00061069
CVC-Marchese-00061071
CVC-Marchese-00061093
CVC-Marchese-00061111
CVC-Marchese-00061169
CVC-Marchese-00104444
CVC-Marchese-00211963
CVC-Marchese-00226419
CVC-Marchese-00226427
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CVC-Marchese-00226444
CVC-Marchese-00226452
CVC-Marchese-00254890
CVC-Marchese-00304632
CVC-Marchese-00304672
CVC-Marchese-00304674
CVC-Marchese-00307442
CVC-Marchese-00307506
CVC-Marchese-00307514
CVC-Marchese-00307598
CVC-Marchese-00307600
CVC-Marchese-00307607
CVC-Marchese-00307616
CVC-Marchese-00319929
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